

# THE TECHNOLOGY REVIEW



*John Taylor Arms*

RELATING TO THE MASSACHUSETTS  
INSTITUTE OF TECHNOLOGY  
FEBRUARY • • • 1929

# technology review

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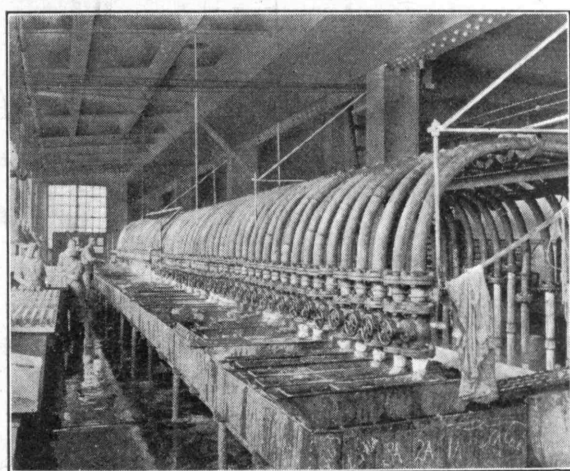
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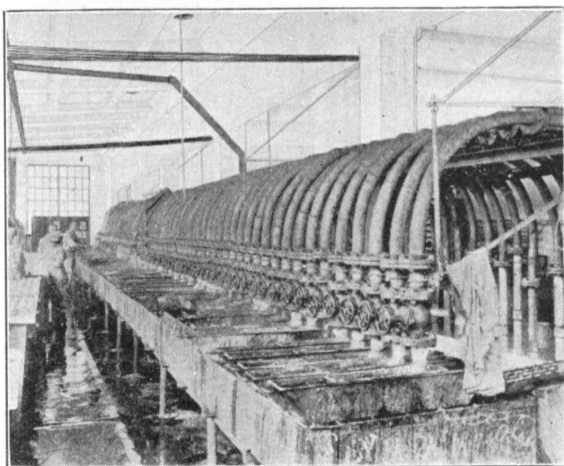


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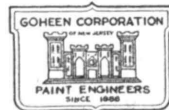
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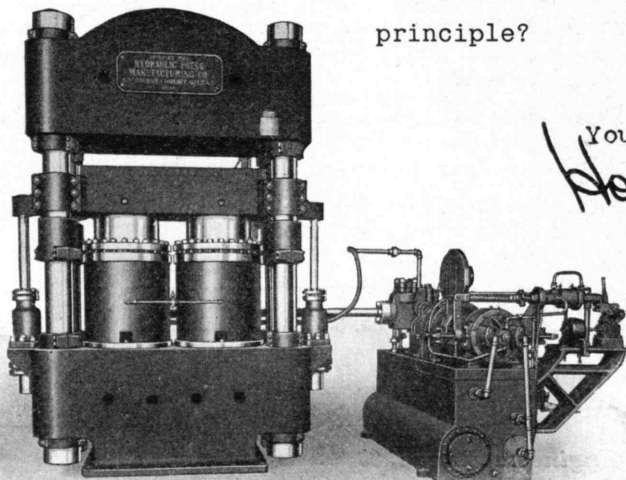


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Relating to the Massachusetts Institute of Technology

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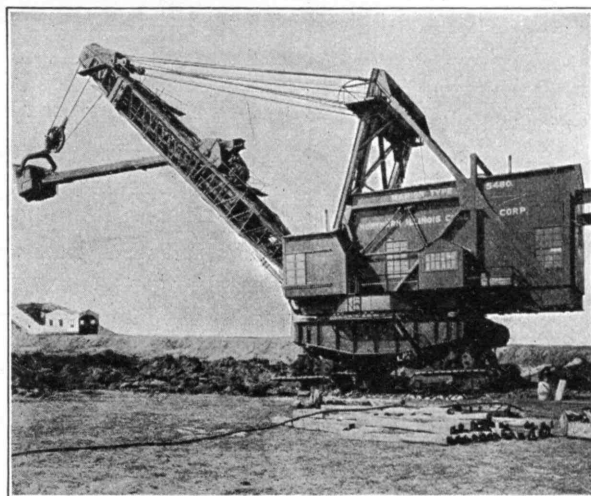
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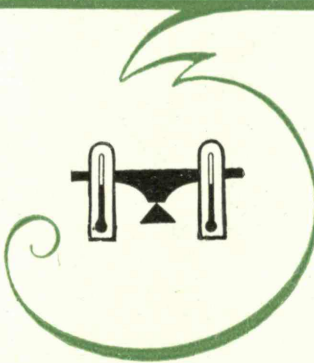
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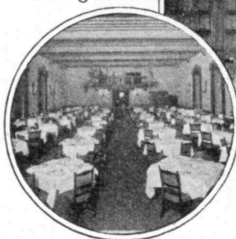
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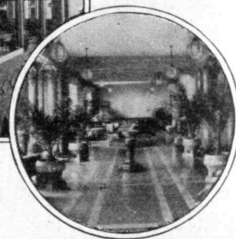
*The main dining room*



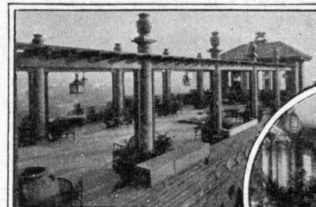
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*The roof garden on the South Wing*



## THE TABULAR VIEW

IF the community compels its children to attend school it assumes at the same time an obligation to watch and promote their health. Too few communities have realized this and fewer still have fulfilled their obligation. In the interest of the public weal, The Review welcomes an opportunity to emphasize systematic child health work and to point out some notable work that is being done — important ground work which will make the college health programs, stressed so persuasively by Dr. Haven Emerson in the December Review, more effective and valuable. ❀ CLAIR E. TURNER, '17, who prepared the article on health programs in public schools, writes out of a rich and active experience. As Director of Health Education Studies at Malden, Mass., he has been instrumental in putting into operation a public school health program that has been notably successful. This work, however, is subsidiary to Dr. Turner's capacities as a teacher: he is Professor of Biology and Public Health at the Institute; Associate Professor of Public Health and Hygiene at Tufts Medical and Dental Schools; and chairman of the health section of the World Federation of Education Associations. The appearance of Mary Frances Turner three months ago gave Dr. Turner another opportunity to apply his ideas and to observe their effects.

THE much-quoted article of Dr. ALLAN W. ROWE, '01, in The Review for last July was written to counteract current misconceptions about the functions of the endocrine glands. In his article in this issue he goes a step further and reveals some of the methods of the endocrinologists as exemplified at the Evans Memorial hospital, in which Dr. Rowe is Chief of Research Service. Once when questioned about the now famous Steinach operation, the Doctor gave a magnificent demonstration that he, no less than Molière's M. Jourdain, has always spoken prose — Rowesque prose, with suave cadences and allusive, exotic words that sweep all before them, including Dr. Steinach. It is hardly necessary to say more of the author, but those who do not yet know how immaculately sartorial he is should view the drawing of him by HENRY B. KANE, '24, published in The Review for December, 1927. ❀ CLARENCE H. HARING is a Professor of Latin American history and economics at Harvard. His interest in South America dates back to his earliest studies at Harvard and Oxford. In 1918 he was a member of the Carnegie Endowment for International Peace to investigate the reactions of the World War in Brazil, Argentina, and Chile. Several books concerning trade and economic conditions with these countries have come from his pen and many book reviews. Consequently he has reason to be interested, as his book review on page 222 indicates, in the Spanish history treated in Professor Seaver's book. ❀ A familiar artist, JOHN TAYLOR ARMS, '11, presents something new in cover designs for this issue of The Review. This is number one of the gargoyle series executed by him and is entitled "Through Wind and Weather." Our readers will remember his etching "Cobwebs" which appeared on the cover of The Review



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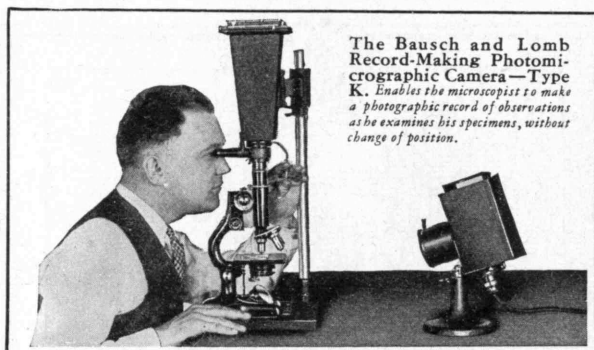
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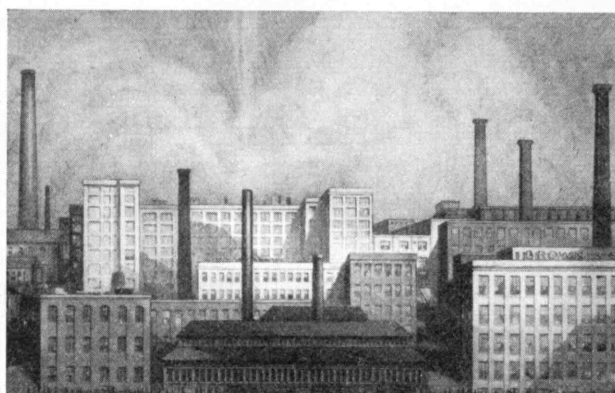
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## THE TABULAR VIEW

(Continued from page 201)

for December, 1927, and his aquatint, "A Hongkong Canal Boat" which appeared in April, 1928. The Editors are indebted to Charles E. Goodspeed and Company for the loan of this etching.

ONE of the uncommon pleasures of editing a magazine which derives its material and authority from an institution of learning arises out of the opportunities that occur to set the record straight when it has been distorted in the popular mind. The public press publishes item after item, statement after statement, discovery after discovery, paralogy after paralogy that needs to be subjected to the scrutiny and comment of specialists who are able to detect errors and fallacies. Of late *The Review* has availed itself more and more of the opportunity and pleasure of engaging in this type of sleuthing. ¶ The method is simple. When some pseudo-scientist, for example, breaks into the front pages of the newspapers with a dubious pronunciamiento, the story is taken to members of the Institute's staff or to others in proximity who are capable of appraising it. The facts about it are obtained from them, together with a proper interpretation and then the truth is presented in the columns of *The Review*. ¶ Absurd and disturbing statements about poison gases, misconceptions about ether music, historical inaccuracies in scientific history, unproved claims for the therapeutic value of ultraviolet light, misinterpretation of statistical data and the sensationalizing of endocrinology are but some of the things upon which *The Review* has been privileged to throw light. Needless to say, it, as well as its readers, owes a full lac of rupees to those contributors who assist us by giving of their time and learning.

THE *Review* for November carried an article by Professor DONALD C. STOCKBARGER, '19 which emphasized the necessity of the medical profession undertaking exhaustive experimentation to determine whether the use of ultraviolet radiations may be dangerous. The timeliness of this is becoming more and more apparent. Recently the New York Academy of Medicine pointed out the misery that might have been saved had early workers on x-rays treated the then unknown radiation with the care they would a stranger's bank check. "This," the Academy says, "should serve as a warning in the case of ultraviolet radiations." There seems to be a growing realization in the medical circles that ultraviolet radiations cannot be used indiscriminately.

IN conjunction with its Department "Books" (see page 222) *The Review* for some time has been operating a Book Service which buys and distributes books and seeks out information about them for its readers. The value and amount of this service has been steadily increasing: many books have been delivered to individuals in this and foreign countries. *The Review* takes much pleasure in performing this function and is desirous of extending its scope. All requests will receive prompt attention.





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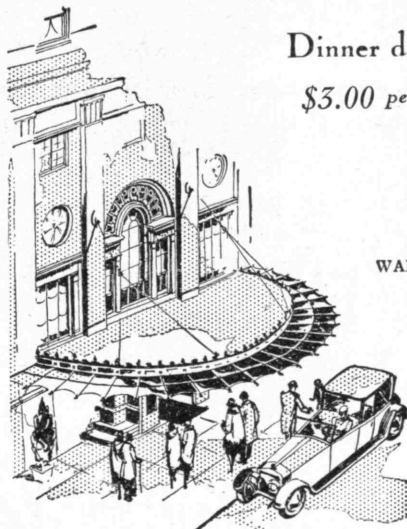
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# The TECHNOLOGY REVIEW

VOLUME 31

FEBRUARY, 1929

NUMBER 4

## CHILD HEALTH PROMOTION

*Communities join the home in bettering the health of the rising generation*

BY CLAIR E. TURNER, '17

PUBLIC schools must be expanding, evolving social institutions if they are to do justice to the needs of their communities. Already they have passed beyond the lone objective of achieving literacy and assumed a broader, more inclusive function of administering to the full needs of the child; their function has grown into one of developing children, not merely one of teaching the three R's.

A major part of this enlightened expansion is the maintenance and promotion of positive health. Progressive leaders in education have realized that health must be one of the first objectives of education and that health programs must be prepared which will achieve a result beyond the mere control of disease.

The activities which constitute the modern school health program group themselves naturally under three headings: (I) Health Protection; (II) The Correction of Physical Defects; (III) Health Promotion.

Activities relating to health protection were naturally the first to receive consideration since compulsory education clearly implied a responsibility upon the community to see that the health of the child was not injured by the law which enforces school attendance. School sanitation has long been religiously discussed; and occasionally it has been provided.

With but few exceptions the standards of sanitation and maintenance in our modern school houses are unmistakably lower than those of the modern home. It seems incredible that a building, housing several hun-

dred children, should be without soap or towels. A recent study of hand-washing facilities of 404 schools located in twenty-two states and the Dominion of Canada showed that only half of these schools have available hot water. One-fifth of them are without soap, and an almost equal number are without towels. From one city comes the report of children sent to wash their hands in cold water at the drinking fountain in the corridor. No soap was available and because of the absence of towels the children had to wipe their chapped hands on their clothing.

It is a common experience to find children in rooms with the temperature as high as 85° F. and with many of the pupils sitting in seats which have not been adjusted to fit them. If some one could devise a plan by which all parents would spend a full day in the school attended by their children, there would be a demand for changed conditions and municipal appropriations for school buildings which would make Uncle Sam catch his breath and roll up his sleeves.

Perhaps the most important single problem in this field is ventilation. Studies by the New York State Commission on Ventilation have revealed that schoolrooms with an average temperature of 68.6° when compared with schoolrooms having an average temperature of 66.5° showed an 18 per cent excess of absence due to respiratory sickness and a 70 per cent excess of respiratory trouble among the pupils in attendance. Relatively few school buildings have adequate ventilating equipment.



CLAIR E. TURNER, '17, PROFESSOR OF BIOLOGY AND PUBLIC HEALTH AT THE INSTITUTE. HIS EXPERIENCES AS DIRECTOR OF HEALTH EDUCATION STUDIES AT MALDEN ARE REFLECTED IN THE ACCOMPANYING ARTICLE





Silhouette drawings from "Malden Health Series,"  
Courtesy D. C. Heath and Company

ago there were regular outbreaks of children's diseases following the opening of school each fall. The communities with professional leadership in school administration and in health administration are now handling communicable disease in a fairly satisfactory manner.

We have not fared so well in the development of physical examinations. In Massachusetts and many other states we got off to a bad start through our enthusiasm and our belief that legislation achieves all things. We passed laws requiring the annual physical examination of every school child, but hardly any community in the country has appropriated the funds to meet such a requirement. School physicians are appointed with a remuneration of a few dollars a year, and they are expected to examine the whole school population when, as a matter of fact, the amount of time they can reasonably devote is about enough to allow the school children to march by them in single file on the double quick. Such men have contributed much of their own time and they can hardly be blamed for being unable to force upon the community a professional or even reasonable definition of physical examination. The usual school examination in this country is still superficial. It is a cause of gratification to citizens of Boston, where school medical service began, that the services rendered by its school doctors remains unsurpassed.

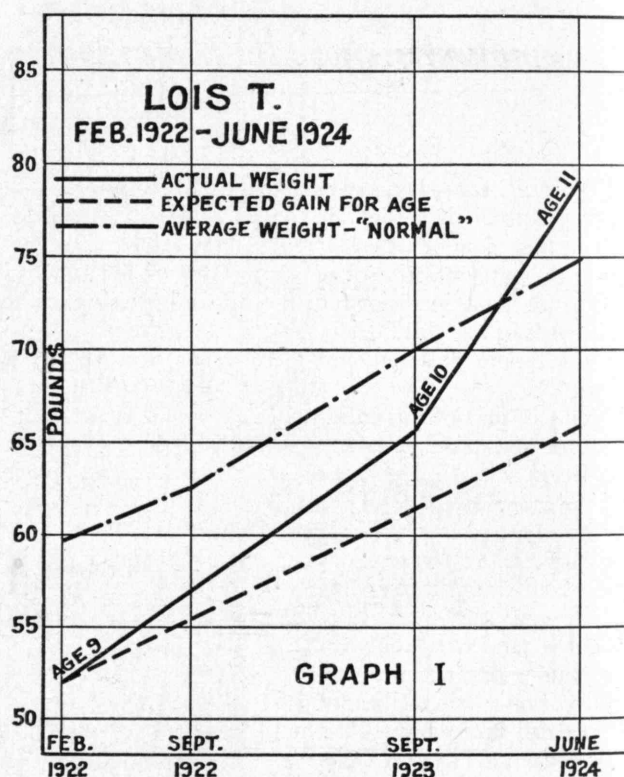
At the present time there are several hopeful signs. Communities are looking with increasing approval upon the continental practice of giving three thorough physical examinations during the elementary school life of the child in addition to cursory inspections during other years and with special medical attention for those children who

Much progress has been made in the control of communicable disease since regular medical inspection was first established in Boston in 1894 as the result of a series of epidemics among school children. The average citizen is not aware that only a generation

ago there were regular outbreaks of children's diseases following the opening of school each fall. The communities with professional leadership in school administration and in health administration are now handling communicable disease in a fairly satisfactory manner. We have not fared so well in the development of physical examinations. In Massachusetts and many other states we got off to a bad start through our enthusiasm and our belief that legislation achieves all things. We passed laws requiring the annual physical examination of every school child, but hardly any community in the country has appropriated the funds to meet such a requirement. School physicians are appointed with a remuneration of a few dollars a year, and they are expected to examine the whole school population when, as a matter of fact, the amount of time they can reasonably devote is about enough to allow the school children to march by them in single file on the double quick. Such men have contributed much of their own time and they can hardly be blamed for being unable to force upon the community a professional or even reasonable definition of physical examination. The usual school examination in this country is still superficial. It is a cause of gratification to citizens of Boston, where school medical service began, that the services rendered by its school doctors remains unsurpassed. At the present time there are several hopeful signs. Communities are looking with increasing approval upon the continental practice of giving three thorough physical examinations during the elementary school life of the child in addition to cursory inspections during other years and with special medical attention for those children who particularly need it. It is significant that parents are often asked to be present at these examinations. A new and valuable movement, carried forward by school departments, health departments, and parent-teacher associations is that

of undertaking to examine the pre-school child, free him from physical defects, and prepare him to get the most from school life before his government begins to expend the \$1000 or more of tax-payers' money which is used for his education. Dental examinations are discovering that most common of all physical defects, — tooth decay. Mental and psychiatric examinations are locating those children who need adjustment and assistance in developing a mode of life within their capabilities. These activities of school sanitation, communicable disease control, and physical examinations are for protection.

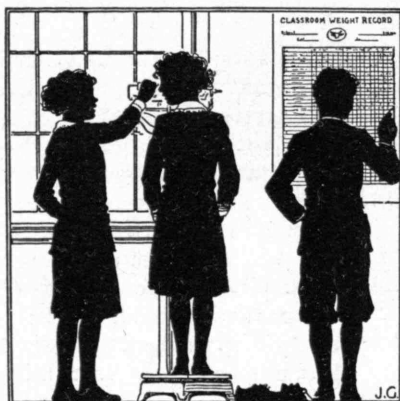
IN THE correction of those physical defects which are found among school children we have relied upon a follow-up program carried out through notices from the



school and through home visitations by the school nurse to explain to the parents the needs of their children. The school nurse has proved an invaluable agent in this service, although we are still asking many of these women to serve 4,000 children when it is generally agreed among health administrators that she cannot work effectively with more than 2,000 children.

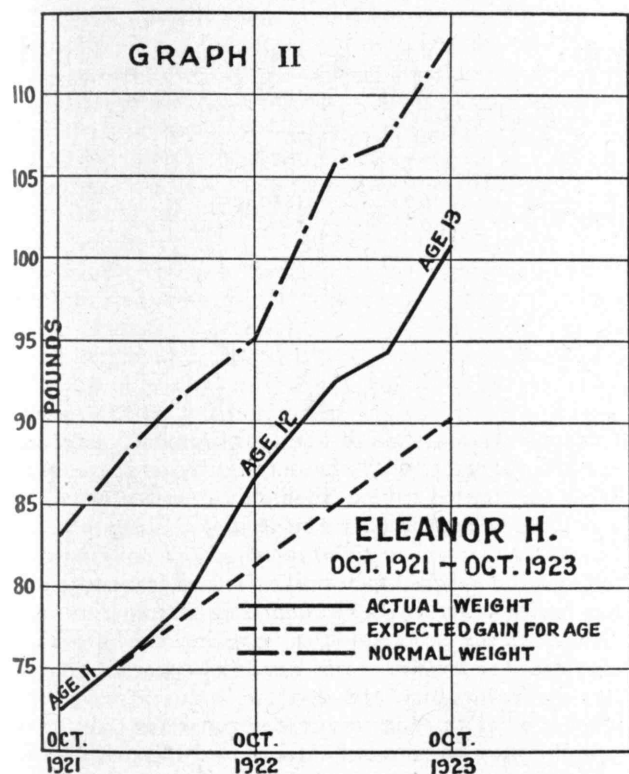
Clinics of infinite variety, — nutrition, dental, eye, ear, nose, throat, cardiac, lung, posture, and habit clinics, — are to be found in our largest cities. The American viewpoint, in contradistinction to that found in many parts of Europe, has held firmly to the administrative principle of making available the services of these publicly-supported clinics only to those children whose families have not the means with which to purchase medical care.

Corrective treatment for certain physical abnormalities has been sought in certain types of special health classes, in addition to classes for crippled, blind, deaf and mute.



These latter provide a type of instruction adapted to the education of a child with a particular and static physical abnormality. The corrective treatment health classes are open-air classes, rest and nutrition classes, and sight conservation classes. Perhaps cardiac classes should also be included. In these instances the educational principle is the provision of a healthful environment which will allow health improvement. Health promotion is the first consideration and scholastic training is developed to an extent consistent therewith.

The newest and in some respects most far-reaching activities of the school health program are those to be found under the heading of health promotion. Increasing attention is being given to the hygienic arrangement of the daily program. This involves the length of concen-



trated study periods, the alternation of work and play, sequence of big muscle and small muscle activities, provision for adequate lunches, the limitation of home work and the conduct of examinations.

A physical activity program has come to be a recognized part of public school procedure. It is fortunate indeed that this is so for play, that joyous happy elf, has been subjugated by the efficiency of modern civilization. The majority of our children are now denied the open fields, the friendly barn, the back lot, the sheltering woods in which a boy may be an Indian. Play must therefore be localized, organized, and directed.

It is probably correct to list physical education as one of the school health activities. It is the most extensively developed and the most heavily budgeted of any of those mentioned here. We should remember, however, that its contribution to health is by no means its only gift to American education. In fact, to my mind, health is not the

major objective in physical education, although vigorous exercise and the development of an enjoyment in sport are distinctly health-giving. Physical education also gives poise, skill, and coordination; it teaches children to play together. It develops sportsmanship, character, and leadership with a definitely beneficial effect upon the mental and social aspect of the child's personality. These contributions are so important as to make physical education worthy of support even if it made no health contribution whatever.



*Silhouette drawings from "Malden Health Series,"  
Courtesy D. C. Heath and Company*

THE most recent addition to the list of school health activities is health education. By this we mean a systematic program in the school system which seeks to develop the habits, attitudes, and knowledge which will contribute to the best physical and mental health. In simpler terms it is the attempt of the public school through the class-room teacher, aided by the various health specialists, to assist in the health training of the child. It contributes to the easier accomplishment of the medical, nursing, and dental program and these in turn contribute to health education. It is a program of positive training, pleasant, not pathological, dealing with "do's", not "don't's", with health, not disease.

It is the child of two parents — Health and Education. From public health it inherits the scientific facts upon which health practices rest; from education it secures the methods by which habits, attitudes, and knowledge may be given to the child. The practicability of this program rests upon the fact that it is really more interesting to teach children than to teach subjects. It is the experience of the teacher that the better she knows the physical and mental nature of her children the more interesting her task becomes.

Health education may seem like an addition to an already busy program in the public school, and in a sense this is so. The teacher no longer feels that the entire responsibility for the health of her child rests upon the doctor and the nurse. She knows the results of the physical examination and she knows something of home conditions. She recognizes that health education is a matter of training, a





THE ROBERT DAWSON EVANS MEMORIAL FOR CLINICAL RESEARCH AND PREVENTIVE MEDICINE, AN INSTITUTION THAT GIVES SPECIAL EMPHASIS TO OBJECTIVE METHODS OF DIAGNOSIS, PARTICULARLY AS APPLIED TO THE DETERMINATION OF FUNCTIONAL DERANGEMENT OF THE ENDOCRINE GLANDS

disease in one or another form, the Parkinsonian syndrome, and leukaemia simulating hyperthyroidism, and various lesions of the central nervous system producing pictures suggestive severally of thyroid, pituitary and ovarian failure. A second and equally important criterion for the interpretation of clinical observation and laboratory test, is that each single measurement must be interpreted in terms of all of the others. To illustrate this point, a lowered basal rate implies a lowered functional activity. In itself it is incompetent to do more than imply a general condition. Examination of the urine may show that the patient's protein intake is below a bare maintenance level and the lowered oxygen requirement is no more than nature's spontaneous effort toward compensation. Instances could be multiplied indefinitely, but enough has been said, it is hoped, to indicate the un wisdom of offering a diagnosis on the basis of any one single observation, and equally, of ignoring the possibilities of a non-endocrine disease because the patient presents intriguing evidence of a possible endocrinopathy.

WITHIN the brief limits of an article of this character it is impossible to touch upon more than a few of the many observations the summation of which goes to establish the diagnosis. Selection has been made, however, of a few of the more significant laboratory tests, and these will be discussed in some detail. The equally important clinical observations do not fall within the scope of this treatment.

*Chemistry of the Urine.* The qualitative examination of the kidney output has long been recognized as a valuable aid to diagnosis. Representing as it does the end results of a large number of metabolic processes, the estimation of the amounts of many of the normal constituents has more recently assumed an importance equal to the detection of the presence of abnormal constituents. The microscope, further, may give valuable evidences of diverse pathology in the genito-urinary tract. Only twenty-four hour collections are to be regarded as significant, as the kidney output varies in quality and quantity from minute to minute. While the volume is in no small measure determined by the water intake, certain disease conditions influence the latter and thus the former magnitude. In pituitary disease, volumes tend to levels above the normal; in adrenal and thyroid disease, to the other extreme. Both of these are simulated by certain types of kidney disorder, while the condition known as diabetes insipidus which may be associated with pituitary

disease but which seemingly is not intrinsic in it, determines the ingestion and elimination of huge quantities of water in amounts totalling several gallons in twenty-four hours. The amounts of the waste products held in solution are influenced both by the amount and character of the food intake, the efficiency of digestion and absorption, the level of the metabolic processes inside the body, and the excretory power of the kidney. Each of these can in some measure be estimated independently, and the integration of tendencies produced by certain endocrine and non-endocrine diseases leads to somewhat characteristic end pictures. The elimination in pituitary disease, for example, is usually ample: in thyroid and adrenal failures significantly depressed. Disease of the kidney, independent of an endocrinopathy, naturally plays a large part, but such conditions are estimated by a number of independent tests some of which, at least, will be touched upon later. The presence of albumin may indicate positive disease of the kidney or a functional disturbance, the causal effect of which lies outside of the



organ. In the same way the apprehension of casts in the sediment may be associated with true kidney disease or be the result of a functional disturbance secondary to some other morbidity. Sugar in appreciable amounts is never a normal constituent in the urine. It is a constant finding in untreated diabetes and frequently observed in overactivity of the thyroid or the posterior lobe of the pituitary; equally so in ovarian failure and that of the adrenals. Of the non-endocrine causes may be enumerated: lesions of the central nervous system, primary anaemia, a large variety of dysfunctional states of the liver, syphilis, and certain other less common conditions. The observation of the presence of sugar in the urine indicates the possible incidence of any of the above, and each must be included or excluded by a series of informative supplementary measurements and tests. Some years ago a substance called "urobilinogen" was determined in the kidney output with certain types of liver disease and a simple test for its determination was developed. More recently the writer has demonstrated a positive response to this test in many cases of pituitary disease and in primary anaemia. An inference to be drawn from this fact is that the test is not specific for the substance, but that in several unassociated conditions end products are eliminated which respond similarly to the test. As these end products not improbably all derive from blood pigment, it is easy to understand that they may be different chemical entities and yet possess in common the one or more auxiliary groups which constitute the basis of the test.

The ingestion of an adequate amount of protein food is essential for the health and well being of the organism. As the body does not oxidize nitrogen it is eliminated in a series of relatively simple compounds, each one of which is the end product of one or more special metabolic processes. The determination of the total nitrogen output and the estimation of the quantities of the several normal constituents such as urea, uric acid, creatinin, and ammonia, shows an undetermined moiety to which the name "residual nitrogen" is usually given. With adequate protein intake and in a state of health this constitutes some 3 per cent to 5 per cent of the total nitrogen output. These studies have shown, however, that in certain of the endocrine disorders and in a considerable number of non-endocrine disease states, this undetermined fraction increases greatly and may even become 25 per cent to 30 per cent of the whole. Further study has shown that this relative increase derives not only from an augmentation of the amounts of substances normally present in small quantity but that there is seemingly the appearance in addition of nitrogen — containing compounds of unknown character and origin. Their nature at the present time is under investigation.

*Blood Chemistry.* Thanks to the development of a quantitative micro-chemical technique, in large part by Dr. Otto Folin and his associates, by the use of the colorimeter, it is now possible to analyze the blood and determine the amounts

of its numerous chemical constituents. This fluid tissue of the body, as it has been so aptly named, is the great channel of ingress of food material being borne to the cells and of egress of the large number of waste products resulting from their metabolism being borne to the several organs of elimination. So delicately balanced, however, are the numerous equilibria concerned in these interchanges, that under standardized conditions it has been possible to determine normal limits for the amounts of the more important constituents. Departures from these limits, naturally, have been correlated with certain disease conditions and have thus assumed a diagnostic import. In thyroid disease, for example, we find an increase in the non-protein and urea nitrogen which is seemingly intrinsic in a direct influence of thyroid function on that of the kidney. In adrenal failure these two substances and the blood uric acid are all at levels above the normal and indicate the presence of a true nephritis. In pituitary disease the blood uric acid alone shows disproportionately high values. With true nephritis and a consequent lowering of the kidney permeability, there is a backing up of these wastes, the blood levels indicating in no small measure the degree of severity of the kidney



Notman

DR. ALLAN WINTER ROWE, '01, CHIEF OF RESEARCH SERVICE AT THE EVANS MEMORIAL, SUPPLEMENTS HIS ARTICLE ON ENDOCRINE GLANDS IN THE REVIEW FOR LAST JULY WITH AN ACCOUNT OF HIS METHODS OF INVESTIGATION

disease. Primary anæmia may simulate a pituitary disorder in an increase in the blood uric acid, while other non-endocrine disorders may show other permutations of normal formulae. The level of blood sugar has become a matter of popular knowledge as its marked increase is one of the cardinal signs in diabetes. These studies have shown an increase in certain types of pituitary disorder, and this differentiates from the hyperglycaemia of diabetes in that it is but little affected by the administration of insulin. Other possible causes of high blood sugar are now under investigation. On the other hand, adrenal failure determines a level of blood sugar definitely below the normal. Certain of the other blood constituents are of much interest, as blood calcium in disease of the parathyroids, but lack of space forbids further discussion.

*Blood Morphology.* Suspended in the plasma or fluid of the blood are vast numbers of tiny cells. One group of these, the erythrocytes, contains the haemoglobin or coloring matter of the blood which plays so dominant a part in the respiratory exchange. Another group, the white cells or leucocytes, are differentiated morphologically into numerous sub-divisions. The relative amounts of each of these determines what is known as a differential blood count, and variations in the relative and absolute amounts assume great diagnostic significance in a wide variety of disease states. One type of cell known as the lymphocyte is found to be relatively much increased in certain of the endocrine disorders. The relative level is much higher in childhood than in adult years, and the endocrine bloods frequently approximate a juvenile formula. The eosinophiles show a slight increase above the normal in pituitary and adrenal conditions as well as certain acute infections, acquired protein sensitivities, the presence of intestinal parasites, and other non-endocrine states. Again the necessity for detailed study to determine the cause of the observation is patent. Certain diseases produce changes in the amount of the normal form elements of the blood, and may also introduce abnormal forms as well. The presence of these latter naturally is of great diagnostic import, and on this single observation alone the differentiation of a leukaemia from a hyperthyroidism which it may simulate, is possible. This will be touched upon later in the article.

*Basal Metabolism.* This quantity, the result of many years of exhaustive physiological research, has in the last few years been applied most helpfully as an aid to the diagnosis of disease. Briefly stated it may be said that the human organism requires energy for the performance both of its voluntary muscular activities and for those involuntary services which are essential to the continued operation of the mechanism. In this latter category fall such energetic outlays as the pumping of the blood by the heart through the capillary bed, the work of respiration and of peristalsis, and the thermodynamic energy absorbed in the concentration of the dilute blood to form the concentrated urine. While the voluntary muscular activities vary within very wide limits, a vast amount of painstaking research has shown that these fundamental involuntary services of the body show an approximate constancy under certain conventional conditions, and in health are influenced solely by certain readily determin-

able variables such as age and sex. The mechanism whereby this energy is provided depends primarily on the oxidation by the body of the so-called food stuffs. Briefly, the plant directly and the food animal indirectly through utilization of the plant synthesizes by endothermic processes a large number of complex chemical compounds. These compounds, by the simple processes of cooking and digestion, are then absorbed by the human body which again by a series of exothermic combustions renders available the energy which they potentially store. For all of these processes oxygen is required, and the amount of that element taken in connection with the character and energy content of the food burned, gives a measure of the energy thus liberated. Needless to say an enormous mass of detailed study has been necessary to establish the heat equivalent of the oxygen consumption, and in this monumental labor the work of the late W. O. Atwater and his associate and successor, F. G. Benedict, stands preeminent. By determining the amount of oxygen consumed from minute to minute by simple spirometric and gas analytic devices, it is possible to calculate with a very fair degree of precision the actual energy requirement of the individual for these fundamental involuntary services. As was stated above, age and sex are independent variables affecting this quantity directly, and in addition the mass of active protoplasm of the body is a third determinant. Approximate measurements have been secured by correlations with the standing height and body weight of the individual as in the Harris-Benedict standards, or the surface area calculated



from the two foregoing as in the Aub-duBois standards. Suffice to say that it is possible today to predict the normal oxygen requirement of the individual in a state of physical rest and a post-absorptive condition, *i.e.* from twelve to fourteen hours after the last food intake, by determination of the age, sex, height, weight, and body area, and the use of the tabulated data correlating these quantities. With a recognition of variations in the individual, the causation of which we cannot today exactly allocate, limits defining the normal are established above and below the reference line of the average. It remains only to determine the actual oxygen consumption of the individual and compare this value with that predicted for the normal to ascertain if they fall within the normal zone or are above or below it.

In the application of this measurement to clinical problems, it has been found that a number of disease conditions will produce marked variation from the calculated normal. Of the endocrine glands, the thyroid occupies the dominant position, overactivity producing an increased requirement which may add 100 per cent or even more to the normal quantity. Conversely, lowered activity of this gland may, in extreme cases, diminish the oxygen requirement to but two-fifths of the amount predicated by health. These values represent the extremes of variation as we know them today. Overactivity of the anterior lobe of the pituitary will produce moderate increments above the normal to the extent of 30 per cent to 40 per cent; while equally severe failures may lower the oxygen consumption by 20 per cent to 25 per cent. Failure of the ovary produces changes of the same order. Overactivity of the ovary is not known. In (*Continued on page 244*)





## *Facts and Fancies about Gas Warfare*

**D**EADLY gases purported to have sufficient toxicity to wipe out whole cities are periodically discovered, according to the public press, and it has grown to be the great indoor sport of a school of front-page chemists to draw horrific pictures of the use of gas in the next war. A ready-made example of this is available in a public statement emanating from Hilton Ira Jones of Chicago, listed in the Directory of the American Chemical Society as Director of Scientific Research, The Redpath Bureau. He is quoted as asserting that the Government possesses knowledge of a new gas, believed by him to be cacodyl isocyanide, which is so overwhelmingly deadly that the Chemical Warfare Service of the Army has attempted to suppress discussion about it.

At best Dr. Jones's statement is an ill-informed outburst, adding to public fear and misunderstanding of lethal gases and their military uses. It is a generally accepted maxim among informed chemists and physiologists that no gas exists at the present time (nor will one be discovered) against which some means of protection and defense may not be devised. Professor James F. Norris, Director of the Institute's Research Laboratory of Organic Chemistry, and former President of the American Chemical Society, in talking recently of the development and use of war gases, stated that the gas referred to by Dr. Jones was tested exhaustively by the Germans (Just and Haber worked at it) during the World War but was not used by them. Dr. Norris, who was in charge of offense chemical research and war gas investigating for the United States Government during the war and is now a consultant for the Edgewood Arsenal, holds that the Allies were also familiar with the cacodyl group and found it unsatisfactory. Thus it seems, there is nothing particularly new or startling about the gas to which the Chicago chemist refers.

Moreover, as Dr. Norris points out, it is improbable that more deadly and toxic gases will be

discovered; enough sufficiently lethal gases are already known. Asphyxiant gases such as phosgene ( $\text{COCl}_2$ ) and blistering gases such as mustard gas (dichlorethylsulphide) will certainly kill if they make contact in sufficient quantities. Instead, the probable trend of gas warfare studies will be toward finding more effective means of using these known gases against the increasing effectiveness of methods to combat them, and in the development of so-called neutralizing gases which incapacitate rather than kill. Anyhow, it is patently absurd to say that any gas could be used in quantities sufficient to annihilate whole populations and altruism of the sort imputed by

Dr. Jones would be obviously incompatible with faithful adherence to the responsibilities the Republic has entrusted to its Chemical Warfare Service.

## *Modernized Architecture*

**A**PRIL will witness the third of the important Architectural and Allied Arts Expositions under the auspices of the Architectural League of New York. At the first of these, in 1925, only three out of every ten of the exhibits showed modern tendencies in designing; two years later, at the second show, this ratio had doubled to six out of ten. According to Raymond M. Hood, '03, chairman of the Exposition's committee on architecture, probably ninety per cent of the 1929 exhibits will be modern in spirit.

To this trend Mr. Hood himself has contributed in no small way; in fact, his own black and gold building, designed six years ago for the American Radiator Company, may be said to have begun it. This structure, facing Bryant Park in New York, inaugurated a fashion which took root and affected most of the scores of office buildings subsequently erected on Manhattan Island. Other architects, such as Ralph T. Walker, '11, winner of the Architectural League's Gold Medal in 1927, because of his work in designing the Barclay-Vesey Building for the New York Telephone Company, demonstrated the possibilities of obtaining sheer beauty as well as



MODERN ARCHITECTURE IS EXEMPLIFIED IN THE  
NEW YORK LIFE INSURANCE COMPANY BUILDING  
DESIGNED BY CASS GILBERT '80

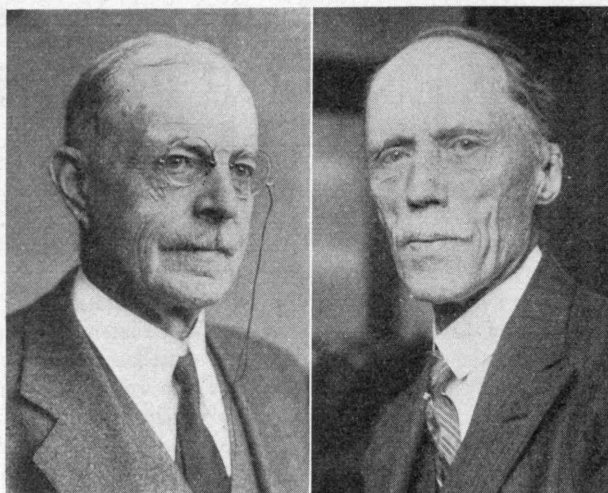
utility by the judicious treatment of architectural masses unadorned with ill-placed classic ornamentation. Most recently Cass Gilbert, '80, has fashioned in the new home of the New York Life Insurance Company on the site of the old Madison Square Garden, a most striking monument of the adaptability of the new forms to better building economics.

As Mr. Hood declares, in support of his prediction that this year's Exhibition will be clearly dominated by examples of the simplified up-to-date architectural treatment to meet modern demands, "Modern architecture has passed the fad stage. . . . It has become an established economic necessity. The old-fashioned 'skyscraper,' the attenuated Italian palace, and the piling of one classic temple on another, can no longer pass muster. The banks are becoming unwilling to loan money on them. . . . The things which decide the elements of the modern building are the practicability and convenience of the persons who are going to use it, for modern architecture is based on utility."

However, modern architecture is susceptible to extravagances and insincerities as have been other modes of architectural expression in the past. A faithful study and application of the lessons of the past have contributed greatly to the successful results achieved in the three notable structures cited above.

### Sub Safety

ONE YEAR from the day she sank off Wood End Light on Cape Cod with her crew of forty men, the United States submarine *S-4* again dropped to the bed of the sea on December 17, 1928. This time she



LEFT: PROFESSOR WALDEMAR LINDGREN, HEAD OF THE DEPARTMENT OF GEOLOGY AT THE INSTITUTE, RECIPIENT OF THE PENROSE MEDAL OF THE SOCIETY OF ECONOMIC GEOLOGISTS; AND RIGHT: J. J. SEDERHOLM, DIRECTOR OF THE GEOLOGICAL SURVEY OF FINLAND, RECIPIENT OF THE PENROSE MEDAL OF THE GEOLOGICAL SOCIETY OF AMERICA. BOTH AWARDS WERE MADE IN NEW YORK AT MEETINGS HELD IN CONJUNCTION WITH THAT OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

went down by prearrangement — a reconditioned, crewless hull sunk in a full-scale test to aid in solving the problem of raising sunken submarines so tragically emphasized a year before.

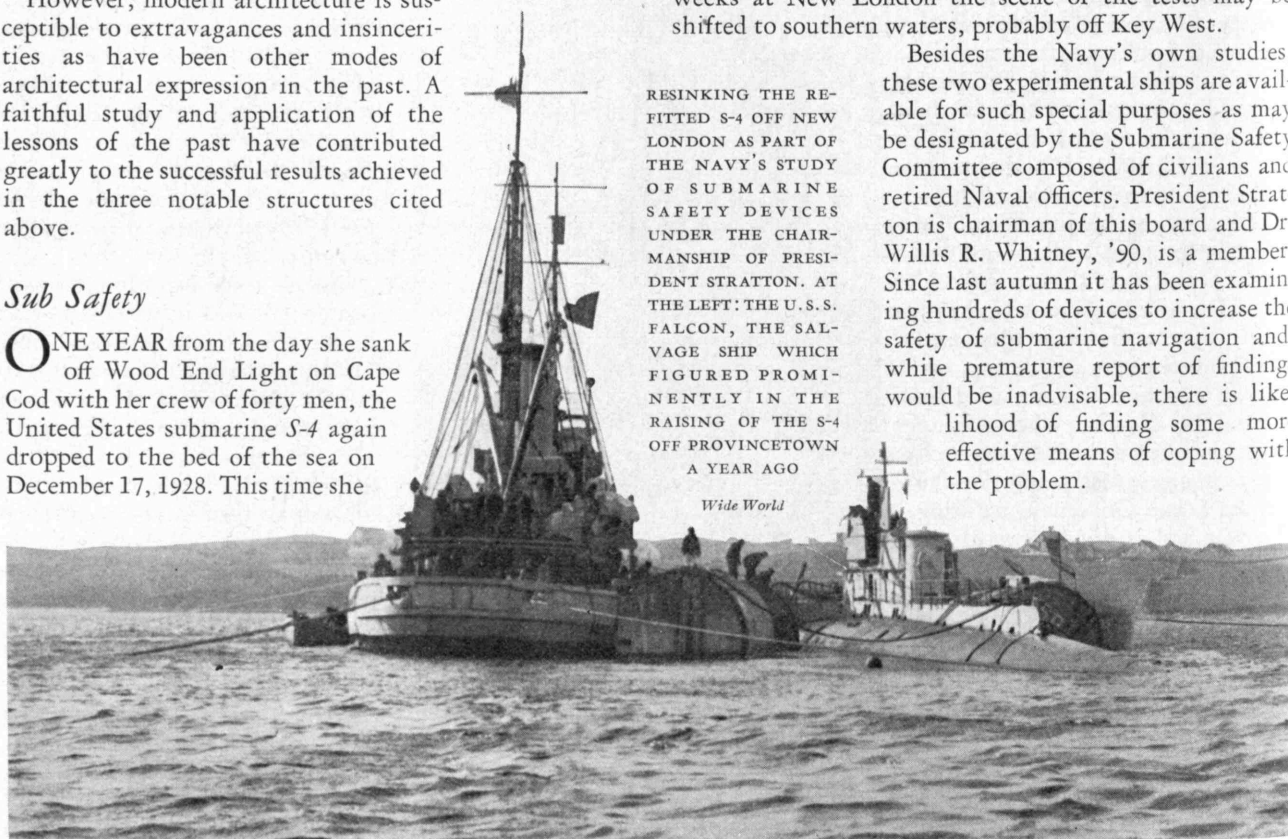
Repaired and equipped at the Portsmouth Navy Yard under the charge of Commander Harold E. Saunders, S.M. '17, who had also been salvage officer of the underwater operations which raised her by March 17, the *S-4* was towed for resinking to Long Island Sound, off New London, by the rescue ship, the U. S. S. *Falcon*. Among the new devices with which she was fitted were "pad-eyes," fastened to her sides as a possible means of quickly securing pontoons or cables to

disabled submarines in rescue operations. Concomitantly the possibilities of a rescue submersible were being investigated. Such a vessel, the *Defender*, has been built, and in some degree it fulfills Jules Verne's prophecy in "Twenty Thousand Leagues Under the Sea," for it is equipped with a diving compartment from which rescue work can be carried out beneath the surface. After several weeks at New London the scene of the tests may be shifted to southern waters, probably off Key West.

Besides the Navy's own studies, these two experimental ships are available for such special purposes as may be designated by the Submarine Safety Committee composed of civilians and retired Naval officers. President Stratton is chairman of this board and Dr. Willis R. Whitney, '90, is a member. Since last autumn it has been examining hundreds of devices to increase the safety of submarine navigation and, while premature report of findings would be inadvisable, there is likelihood of finding some more effective means of coping with the problem.

RESINKING THE RE-FITTED *S-4* OFF NEW LONDON AS PART OF THE NAVY'S STUDY OF SUBMARINE SAFETY DEVICES UNDER THE CHAIRMANSHIP OF PRESIDENT STRATTON. AT THE LEFT: THE U. S. S. *FALCON*, THE SALVAGE SHIP WHICH FIGURED PROMINENTLY IN THE RAISING OF THE *S-4* OFF PROVINCETOWN A YEAR AGO

Wide World





## American Association for the Advancement of Science

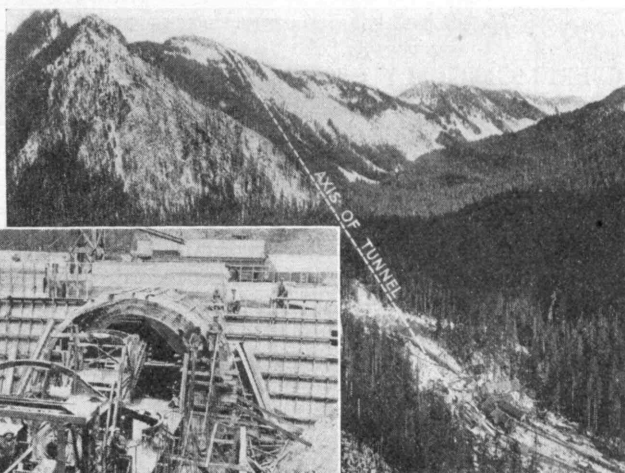
IT IS not unfair to appraise the Eighty-Fifth Meeting of the American Association for the Advancement of Science, which met in New York during the recent holiday season, as more of a circus performance than a profound and dignified gathering. Only an omnipresent and omnivorous being could have heard and absorbed all that happened in the course of nearly three-score sectional meetings and the presentation of 2,000 or so papers. There was ballyhoo galore; and many of the 5,000 or so souls that attended were out chiefly to make a noise, see New York, and have a good time during the vacation.

Before it was over, the President, Henry Fairfield Osborn, successor a year ago to Arthur Amos Noyes, '86, found it expedient to rebuke Harry Elmer Barnes for a paper he delivered on Religion's need for embracing Science. The incident produced further unseemly exchanges. This plus the very obvious instances of emphasis placed on the more sensational aspects of science certainly did little toward creating more public confidence and respect for the Profession of Science. Publicity-mongering, it appeared, often pushed aside dignity and restraint.

Of course there was important and notable work brought to light as in previous meetings. The award of the Association's premier \$1,000 prize to Dr. Oliver Kamm fittingly recognized his achievements in the study of the ductless glands and the isolation of the pituitary hormones. The address of Dr. Harlow Shapley, Director of the Harvard College Observatory, on the contents of space outside our own galaxy, was particularly important in the light of his recently announced theories about the center of the universe. Also, there were numerous other important papers and awards such as the Penrose Medals (see page 214). With such examples as these it is the more to be deplored that the cult of headline worship was so extensively reflected in the press accounts to the exclusion of the small group of really earnest men who value science more than publicity. The humanization of Science cannot be furthered by catchcalls and sensationalism.

## Chemistry Again Aids Medicine

OLIVER KAMM (*vide supra*) has demonstrated brilliantly that medicine is increasingly dependent upon pure chemistry. His isolation of two active principles of the pituitary gland which may be used to reduce the suffering incident to child birth and to aid certain surgical operations may be compared in importance to the discovery of insulin.

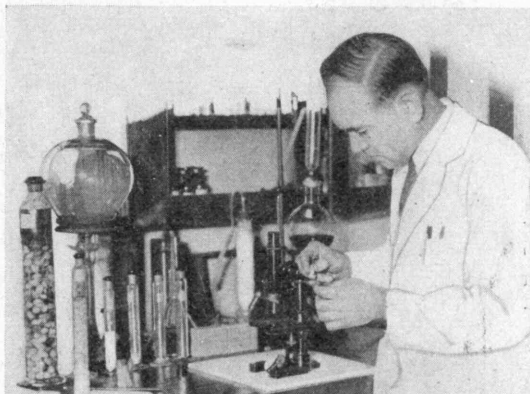


WEST PORTAL OF THE LONGEST RAILWAY TUNNEL IN THE WESTERN HEMISPHERE OPENED WITH APPROPRIATE CEREMONIES JANUARY 12. TO THE LEFT: A UNIQUE CONCRETING DEVICE COMBINING A PORTABLE MIXING PLANT WITH STEEL FORMS IN SUCH A WAY AS TO PERMIT THE PASSAGE UNDERNEATH OF TRAINS

In response to a request from *The Review*, Allan W. Rowe, '01, author of the article on endocrine research on page 209, has commented as follows: "Such work as that

of Dr. Kamm spells real progress for not only does it provide the physician with a therapeutic aid of great efficiency and power, but even more importantly it demonstrates the existence of hormonal bodies which are able to reproduce in no uncertain manner the peculiar and particular physiologic reactions which have been ascribed to the secretion of the gland. It is by such work as Dr. Kamm's . . . that a more exact knowledge will derive as to the physiological effects of these true endocrine structures in health and consequently in disease, and thus the physician will be aided both in the diagnosis and in the treatment of the real endocrinopathies. Such work as this determines the progress of the art of healing which in turn operates toward the palliation and even alleviation of human disease and suffering. . . . Kamm has isolated two independent substances in one of which is found the so-called pressor action, while the other produces the effect which has long made pituitary extract of value in obstetrics.

"The endocrine glands are among the potent regulators of body metabolism. They operate seemingly through the agency of the specific compounds called hormones, and from disturbance in the production of these powerful agencies, be it over or under production or even production of abnormal material, a long series of distinct diseased conditions arise among which are some of the gravest maladies to which mankind is subject."



DR. OLIVER KAMM TO WHOM WENT THE \$1,000 PRIZE OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Wide World



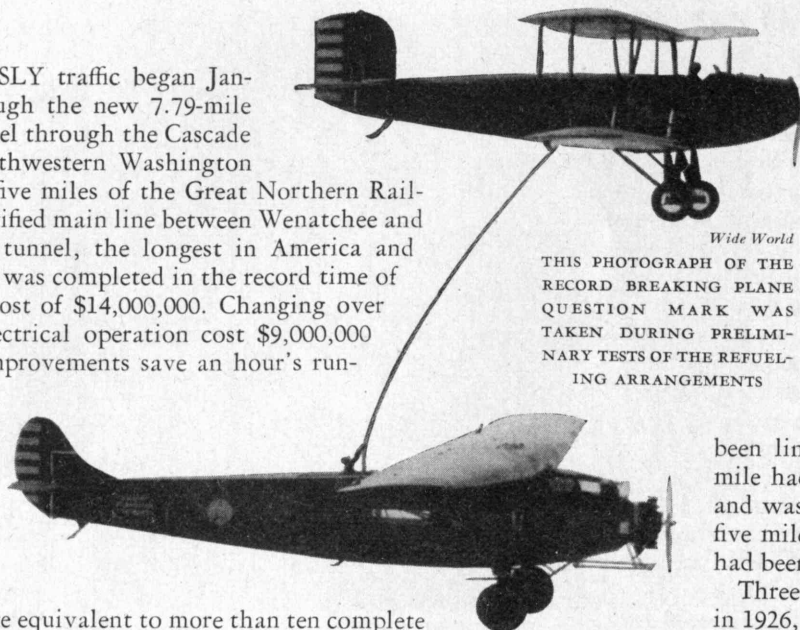
## Lengthy Bore

CEREMONIOUSLY traffic began January 12 through the new 7.79-mile dead straight tunnel through the Cascade Mountains in northwestern Washington and over seventy-five miles of the Great Northern Railway's newly electrified main line between Wenatchee and Skykomish. This tunnel, the longest in America and fifth in the world, was completed in the record time of three years at a cost of \$14,000,000. Changing over from steam to electrical operation cost \$9,000,000 more. The two improvements save an hour's running time for through passenger trains and three hours for freights, shorten the line nine miles, lower the summit 502 feet, eliminate curvature equivalent to more than ten complete circles, cut out eighteen miles of maximum 2.2 per cent grade, make unnecessary nearly eight miles of snow sheds and almost constant operation of rotary snow plows during the winter months over fifteen and one-half miles of track. The annual maintenance saving on account of snow will approximate \$600,000.

The directors of the Great Northern authorized the construction of the tunnel November 26, 1925, and the contractors' forces appeared early in December, 1925.

From a pioneer tunnel, located about fifty feet south of the main tunnel, cross-cuts to the route of the latter were made every 1,500 feet or closer as required. This made it possible to keep the work going at a number of faces continuously and simultaneously. Through the pioneer tunnel the trains carrying workmen and supplies and removing rock were able to operate without interfering with work in the main bore. Also it contributed to draining off the water which was encountered and through it were run the huge air conduits which supplied all parts of the workings, the compressed air pipes which furnished power for the drills and shovels, and the power lines which operated other machinery and lighted the workings. By keeping the main bore free from these obstructions, it was possible closely to follow enlargement operations with the work of lining the excavation with the massive concrete walls.

The main tunnel was advanced principally by the center heading method, that is, by boring ahead as rapidly as possible with a tunnel



Wide World  
THIS PHOTOGRAPH OF THE RECORD BREAKING PLANE QUESTION MARK WAS TAKEN DURING PRELIMINARY TESTS OF THE REFUELING ARRANGEMENTS

just large enough to accommodate the drilling and mucking machines. Other crews followed, enlarging the tunnel radially to the full-sized excavation. Illustrative of the progress made possible by this plan of attack is the fact that on October 20, 1928, the day the first continuous hole was opened through the main tunnel, six and one-half miles had already been lined with concrete, another mile had been enlarged to full size and was ready for concreting, and five miles of electrical installation had been completed.

Three times in as many months in 1926, the tunneling forces broke their own and the world's record for tunnel advance in a thirty-one-day period. Twice again, in the following year, new records were established.

Colonel Frederick Mears, Assistant Chief Engineer of the Great Northern, was in direct charge of the improvement program. The triangulation project to check the original surveys was carried out under Henry B. Alvord, '07, and Jackson and Moreland of Boston were the consulting engineers on the electrification work. Professor



Wide World  
SPARK PLUGS WERE CHANGED AND OTHER ADJUSTMENTS WERE MADE ON THE MOTORS DURING THE FLIGHT OF THE QUESTION MARK. THE MECHANICS CLIMBED OUT ON THESE CATWALKS TO REACH THE MOTORS

Dugald C. Jackson, Head of the Department of Electrical Engineering, and Edward L. Moreland, '07, former member of the Executive Committee of the Alumni Association, are the senior partners of this firm, which also acted as consultants on the electrification of about 175 track miles of the Lackawanna's suburban system out of Hoboken last year. Ralph D. Booth, '20, junior partner, and John R. Coffin, '17, were the resident representatives for Jackson and Moreland.

THE new Cascade Tunnel is exactly 998 feet shorter than the Mont Cenis Tunnel between France and Italy, the oldest lengthy Alpine tunnel still used. The Mont Cenis, between France and Italy, begun in August, 1857, was not finished until September, 1871, or eleven years longer than it took to build the Great Northern tube.

The Boston and Maine's Hoosac Tunnel under the Berkshires in Western Massachusetts (4.38 miles) was begun in 1855 and finished, after many interruptions, in 1876. Airdrills and nitroglycerin here had their original use in America, but the early operations were by hand. The Hoosac, now the fourth, held the American record for forty years until the Canadian Pacific completed in 1916 the Connaught Tunnel (5.02 miles) to eliminate Rogers Pass Summit in the Selkirks. The Moffat of the Denver and Salt Lake (6.11 miles) under Long's Peak in the Colorado Rockies, opened a year ago this month, exceeds the Connaught but is 1.68 miles shorter than the Cascade.

Besides the Mont Cenis, three international Alpine tunnels connecting Switzerland and Italy exceed the latest American record holder.

With their construction dates, they are: the Loetschberg, 9.0 miles, October, 1906-June, 1913; the St. Gothard, 9.26 miles, September 1872-December, 1881; the Simplon, 12.4 miles, August, 1898-January, 1906.

### *The Question Mark*

MAJOR C. H. Biddlecombe, during the World War an officer of the British Royal Air Force and now a lecturer and air transportation expert in American aeronautical circles, appeared before the Technology Club of New York, on January 7, to read a paper on airplane engine design and performance. It was timely and fitting that this special program meeting of the Club came but a few hours after the Army monoplane, the *Question Mark*, had finished its record flight of 150 hours, 40 minutes, and 15 seconds, the official recorded time.

Equal to the occasion and sufficient unto the moment, Major Biddlecombe presented to the members of the Club data about the Wright Whirlwind engines which were used in the *Question Mark* to break every endurance record of consequence except the non-refuelling record of 65 hours and 25 minutes made by the Germans Johann Risticz and Wilhelm Zimmerman last summer.

The great flight of the *Question Mark* piles Pelion upon Ossa in America's climb to supremacy in aeronautics. It but adds an impressive record to many others made in less than three years: the Atlantic Ocean has been crossed five times; three American planes have flown to Hawaii; Australia has been reached by air; three-quarters of the globe has been encircled in flight from Detroit eastwards to Japan; and the North Pole has been flown over on two occasions.

### *Intellectual Stock Taking*

BECAUSE it feels there is a need for some survey of the world's "intellectual situation" with the purpose of formulating a future program of service to all branches of learning, the ambitious American Philosophical Society has jumped into the limelight with an announcement that it proposes to take inventory of present day knowledge. A committee composed of Francis X. Dercum, President of the Society, and forty-two members has been chosen to attempt an answer to the following all-inclusive questions:

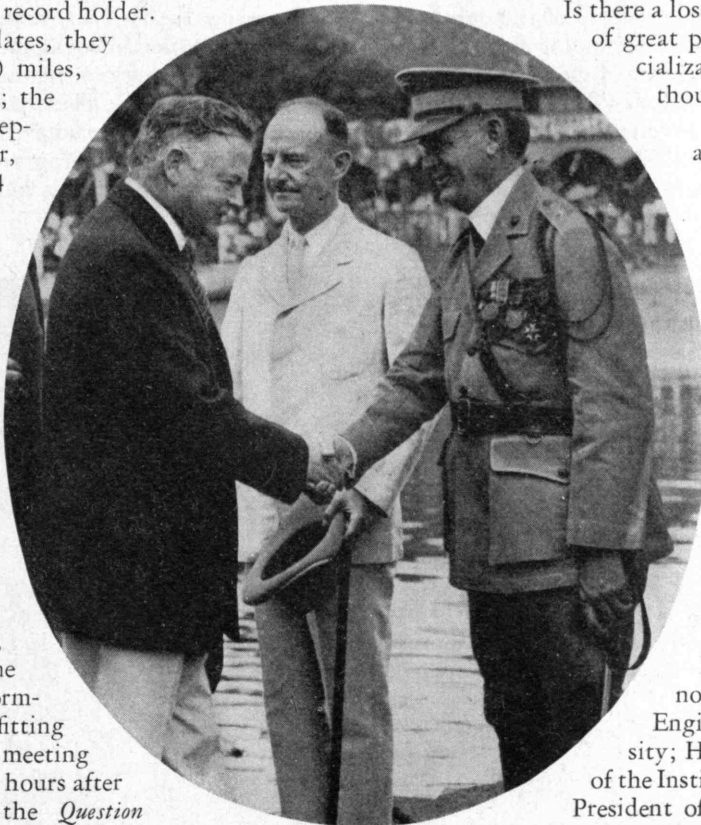
What today is the world's intellectual situation?

Is there a drifting apart of the purely scientific interests and the humanistic interests?

Is there a loss of perspective and of grasp of great principles by reason of specialization in education and in thought?

How can these interests and these branches of individualistic learning be coordinated into one program with one common purpose—the promotion of all useful knowledge?

Members of this committee who are known to Institute men are: Frank Aydelotte, Professor of English at the Institute from 1916 to 1921, now President of Swarthmore College; Arthur E. Kennelly, Professor of Electrical Communications at the Institute from 1914 to 1925, now Professor of Electrical Engineering at Harvard University; Henry S. Pritchett, President of the Institute from 1900 to 1907, now President of the Carnegie Foundation for the Advancement of Teaching; Elihu Thomson, a member of the Corporation since 1898 and consulting engineer for



MR. HOOVER LANDS IN NICARAGUA  
AND IS GREETED BY BRIGADIER  
GENERAL LOGAN FELAND, '92



the General Electric Company; and Edwin B. Wilson, Head of the Institute's Department of Physics from 1917-1922, now Professor of Vital Statistics in the Harvard School of Public Health.

The history of The American Philosophical Society is distinguished both by its works and its members. The Society originated in The Junto established in Philadelphia by Benjamin Franklin in 1727. Fifteen of its original members were signers of the Declaration of Independence, and eighteen helped to frame the Constitution. In 1743 Franklin issued a call for the formation of a society which he urged "be formed of virtuosi or ingenious men residing in the several colonies, to be called The American Philosophical Society, who are to maintain a constant correspondence. . . ." So formed, the Society existed until 1769 when it united with The Junto and elected Benjamin Franklin President each year until his death in 1790.

### *Happy New Year*

SOLACE to all was served up in the metropolitan dailies this holiday season. From the winter solstice on through the January clearance sales the financial sections of the papers were chock-a-block with optimistic dicta from business leaders. To digest many of the opinions is impossible but some by a few Technology Alumni may be compressed into the remainder of this page.

According to Samuel M. Felton, '73, Chairman of the Board of the Chicago, Great Western Railroad, "the outlook for 1929 is encouraging." Charles Hayden, '90, President of Hayden, Stone and Company, feels another year of unprecedented prosperity is assured because, "in con-

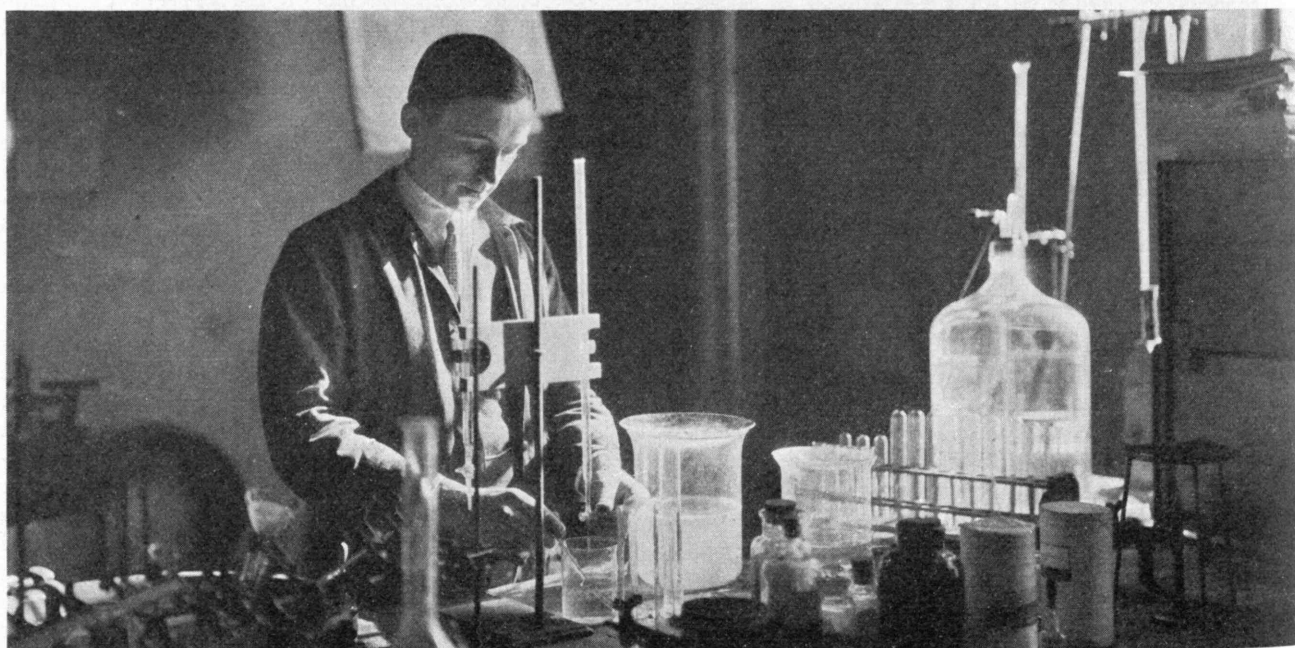


REDFIELD PROCTOR, '02, OF PROCTOR, VERMONT, NEWLY ELECTED PRESIDENT OF THE NEW ENGLAND COUNCIL

trast with the wild gyrations in the stock market, actual industry has been conducted along sound lines"; Alfred P. Sloan, Jr., '95, President of General Motors Corporation, also believes there "is nothing except soundness in the general economic and industrial situation"; and Gerard Swope, '95, President of the General Electric Company, agrees that "basic economic conditions are sound." Mr. Swope continues that inventories are "not unduly expanded, credits and collections satisfactory, earnings of labor high and employment steady, all of which presage a favorable outlook for 1929."

Frank L. Dame, '89, President of the North American Company, predicts that the public utility industry which, he says, last year established new records in output, in service and in plant extension has a "most promising outlook." Expenditures for large engineering projects during 1929 will be larger than ever before, thinks Thomas S. Holden, '16, Vice-President of the F. W. Dodge Corporation, while Paul W. Litchfield, '96, President of the Goodyear Tire and Rubber Company, looks for a "continuation of good times in the United States well into the next year." Mr. Litchfield has confidence there will be a "continued increase in the use of automobiles in nearly all countries," which opinion checks that of Mr. Sloan who believes no one has "any real appreciation of what can be accomplished in the development of our overseas business."

To clinch the argument (and close the column), Matthew C. Brush, '01, President of the American International Corporation, trumps: "I unhesitatingly predict a continuous and increasing prosperity for the next four years. . . . I am a great bull on this country and its future."







## *Polar Radio Studies*

COINCIDENTALLY with the arrival of the Byrd Antarctic Expedition at the great ice barrier in the Ross Sea, begins the first active search for further data to increase mankind's knowledge of the science of radio communication in the South Polar Region. It is understood that thirty radio transmitters and receivers are included in the expedition's equipment, principally for the purpose of maintaining communications with the United States. It is practically certain, however, that the radio personnel will attack such problems as the reflection of signals from the Kennelly-Heaviside layer.

Recently Technology's Radio Research Station W1XV on the estate of Colonel E. H. R. Green at Round Hill, Massachusetts (see picture on following page) established communication with the *Eleanor Bolling*, one of Byrd's supply ships, while she was steaming back from the ice barrier en route for supplies at Dunedin, New Zealand. The ship's operator reported that when the vessel again turned southward early this year, he would arrange to communicate with the Institute's station on a regular schedule. An incidental purpose will be that of facilitating communication between Byrd's men and their families here at home.

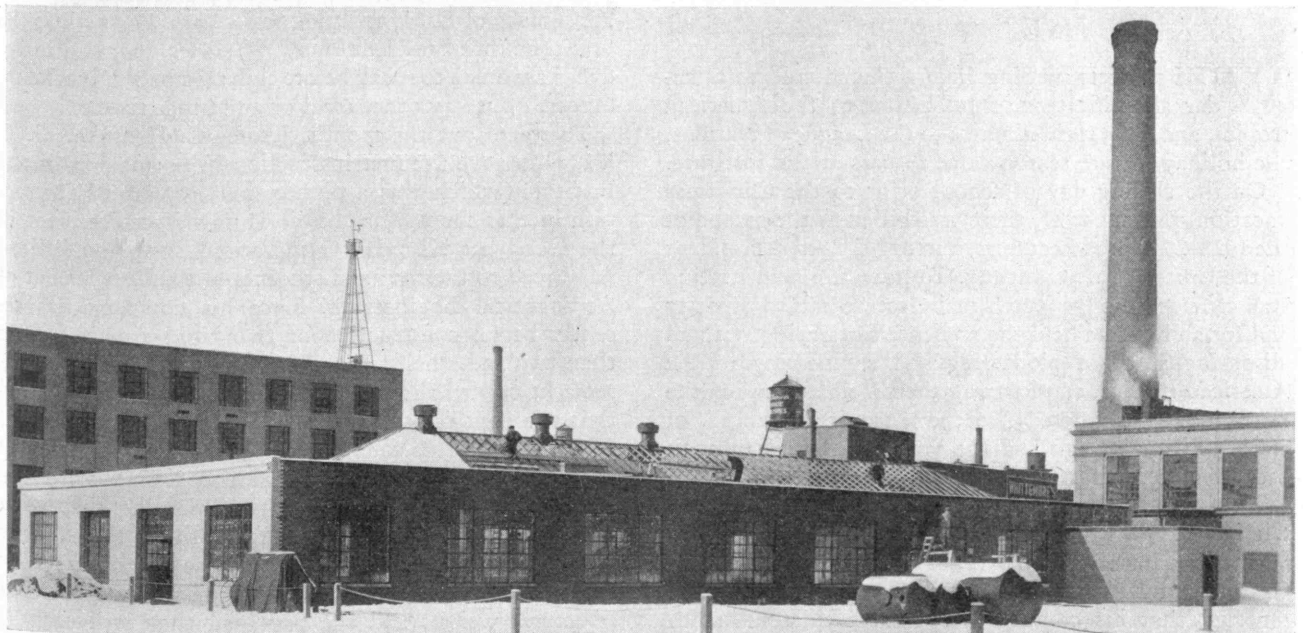
Such an interchange of messages is expected to reveal any eccentric behavior of radio signals from the Antarctic region. The experiments will be carried on with short-wave apparatus and the reception at various times of the day and under all weather conditions will be studied. Aside from the scientific value of the undertaking, the Institute's station, which is in charge of Howard A.

Chinn, '27, Research Assistant in the Department of Electrical Engineering, thus becomes one of the sources of news from the Byrd Expedition.

## *Undergraduate Scholarships*

FOR 1929-1930 and thereafter, additional funds for undergraduate scholarships will be available in the form of revenue from a bequest of \$25,000 which the Institute has now received from the executors of the estate of David L. Jewell, a resident of "Wollaston, Quincy, Norfolk County, Massachusetts." Colonel Jewell who died December 1, 1927, aged 90, willed this sum to Technology "to establish a fund known as the David L. Jewell Fund, the income therefrom to be used to pay the tuition charges of five young men who may be selected by the President or Board of Trustees of the Institute as worthy of assistance, and who, were it not for such assistance, might be unable to pursue their studies at such Institute."

Few realize how marked has been the increase in the amount Technology is able to expend annually for undergraduate scholarship aid which, for 1918-19, was \$22,682.50, while for 1928-29 awards made to January 20 totalled \$72,126.00. Nearly one out of every six undergraduates is now receiving assistance, the awards being based on two factors: the applicant's scholastic record and his evidences of need and worthiness. In general, grants are for less than full tuition except to women students whose demands have never, until this year, matched the supply of available income from funds restricted by deed of gift to their use. At present, twelve women are receiving full tuition and 328 men students hold awards.



NEW AUTOMOTIVE ENGINE LABORATORY TO BE COMPLETED EARLY THIS SPRING. TO THE LEFT SIDE MAY BE SEEN THE NEW WEATHER FORECASTING EQUIPMENT ATOP THE GUGGENHEIM AERONAUTICAL LABORATORY

## Surface Craft Safety

WILLIAM HOVGAARD, Professor of Naval Design and Construction, in charge of the Institute's Course in Naval Construction, has been appointed to the Committee on Ship Construction which the Department of Commerce has constituted to study the problems of passenger ship construction. This Committee is to collect material for the United States official delegates to lay before the International Conference on Safety of Life at Sea when it opens in London this spring.

As part of the preliminary investigations, Professor Hovgaard is now actively engaged with the calculations bearing on the buoyancy and stability of ocean-going passenger ships.

In this he is being assisted by Henry H. W. Keith, '05, Professor of Naval Architecture, who engineered the difficult launching of the U. S. S. *Lexington* at Fore River, and F. Alexander Magoun, '18, Instructor in the Department of Naval Architecture and Marine Engineering.

Also two graduate students, Lieutenants Edward V. Dockweiler and John J. Scheibler, both of the Construction Corps of the U. S. Navy, have undertaken portions of the problem as part of their thesis work.

## In the Lecture Halls

WITH subjects ranging from artificial cold to calendar simplification, from China to the American tropics, and from rigid airships to the League of Nations, the holiday lecture season came to pass at the Institute.

On the closing day of school prior to the Christmas vacation, December 21, there was billed as the second of the 1928-29 Aldred Lecturers, Victor M. Cutter, President of the United Fruit Company. To hear him students and staff crowded the Institute's main lecture hall to capacity and for an hour he held the audience's attention with an absorbing story of pioneering and engineering in the American tropics, emphasizing the contrast between the conditions encountered by the "tropical tramp" of twenty-five years ago and the youthful American engineers sent to Latin America today.

Two days before Mr. Cutter came, contrasts of today with what may become the millennium of 1933, were offered to the Faculty Club by Paul H. Wilson, Secretary of Graton and Knight Company of Worcester, Mass. He reported that his company has used a thirteen-month calendar since 1918, that it has proved a blessing, that it ought to be generally adopted.

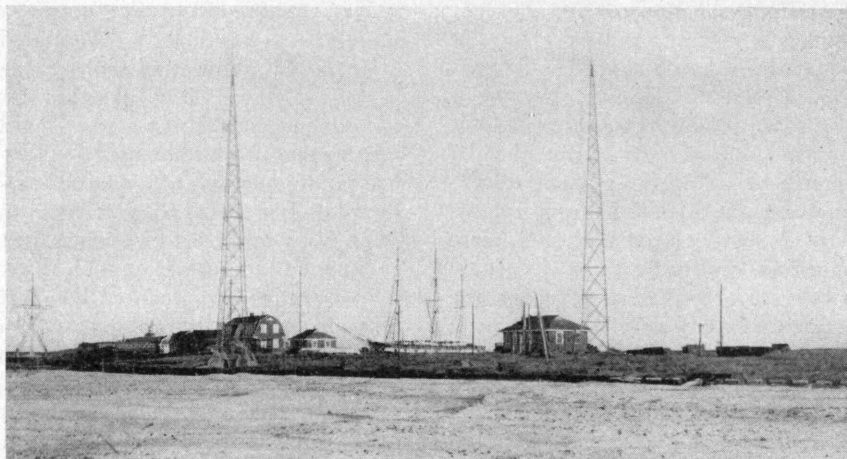
Admiral William S. Sims, U. S. N. Ret., and Gordon B. Wilkes, Associate Professor of Industrial Physics, tied for the January lead-off honors. Admiral Sims spoke before the Faculty Club at luncheon on the eleventh, his remarks being by request not reported. Professor Wilkes gave his lecture, "Artificial Cold and Its Applications," thrice, once each day for three successive days. His was the second of the season's Society of Arts lectures and his remarks are to form the basis of a forthcoming article in The Review. January 15 saw the appearance of another luncheon talker before the Faculty Club. This time it was Dr. Arthur N. Holcombe, Professor of Government at Harvard University, returned recently from a prolonged sojourn in China where he had opportunity to study some

of the educational and political problems of that country. Two days later, for the Faculty Club never operates on a fixed schedule and its members are convoked upon short notice when a really interesting speaker appears in the offing, another Harvard professor addressed the club at noon day.

Precedent of an-

other sort, however, was thrown to the four winds, for the speaker was a woman, Alice Hamilton, M.D., Assistant Professor of Industrial Medicine at the Harvard Medical School. Entirely aside from her subject which was "The Health Work of the League of Nations," the appearance of Dr. Hamilton, on January 17, marked the first time that President Harry W. Tyler, '84, had introduced a woman to speak before club members at luncheon, dinner, or at any other meal or any other time.

To round out the month, Jerome C. Hunsaker, S.M. '12, who gave the first instruction in aeronautics at the Institute (which was a pioneer in aeronautical instruction in this country) and who is now Vice-President of the Goodyear Zeppelin Corporation, spoke on "Rigid Airships" to the staff and students of the Department of Aeronautical Engineering. Since his company has recently begun construction of two rigid airships, more than two and a half times the size of the *Los Angeles*, his remarks carried the weight of authority. He prophesied that the next phase in the engineering development of aeronautics in this country would be the exploitation of the rigid airship and compared the airship with the airplane as a commercial carrier, observing that with airships "... the larger you make them, the easier it is to make them go fast and the more economical they are — economical as measured by the relation between structural weight and the pay load they will carry." The airplane in its present form cannot claim this advantage for justifying increases in size.



WIXV, TECHNOLOGY'S RADIO RESEARCH STATION AT ROUND HILL, MASS.





AERIAL PHOTOGRAPH OF THE INSTITUTE PROPERTY TAKEN FROM THE SOUTHWEST. THE OPEN LAND IN THE LOWER LEFT PORTION OF THE PICTURE IS OWNED BY TECHNOLOGY

### *Forthcoming Convention*

FOURTEEN years ago the Technology Clubs Associated convened in Pittsburgh for their third meeting, and this year, on May 10 and 11, they return there for their twelfth. As directing head of the forthcoming gathering, Maurice R. Scharff, '09, President of the Clubs, has announced an executive staff: Irving W. Wilson, '11, general chairman; Warren I. Bickford, '01, chairman of the finance committee; George E. Whitwell, '15, chairman of the publicity committee; and Rufus E. Zimmerman, '11, chairman of the program and entertainment committee. Besides Mr. Scharff and the staff, the officers involved are the five Vice-Presidents of the Clubs: John L. Shortall, '87, of Chicago; John L. Mauran, '89, of St. Louis; George K. Burgess, '96, of Washington; George E. Merryweather, '96, of Cleveland; and Richard H. Ranger, '11, of New York.

The fact that the Technology Club of Western Pennsylvania is host to the Clubs this year augurs well; few local alumni groups approach it in activity and none is more flourishing. The Pittsburgh dinners held regularly are important and well-conceived affairs and give some indication that the forthcoming convention will differ from

the innocuous, ill-supported reunion held last May at Atlantic City. It is a good omen, too, that Pittsburgh is the only meeting place, excepting New York, which the T. C. A. will have revisited.

### *Dinner Date*

DEFINITELY the date for the Annual Dinner of the Alumni Association has been set as February 16. Notices have been mailed out to more than seven thousand Alumni, all within easy reach of Boston, and it is expected that some ten per cent of these will gather in the assembly room, adjacent to the main ballroom, of the Hotel Statler, at 6:30 that evening.

The change of location will be welcomed by many; the Hotel Statler is more accessible than the Chamber of Commerce and has better parking facilities nearby. Tickets for the Dinner will be mailed out by the Association as rapidly as requests and checks are received for them. The price is \$4.00.

All graduates and former students of the Institute are eligible to attend, as well as members of the Institute's staff and honorary members of the Association. Alexander Macomber, '07, President of the Association, will preside.





## BOOKS



Spanish History • • Book Printing • • Newspapers

### *Comuneros*

THE GREAT REVOLT IN CASTILE, by Henry Latimer Seaver. \$5.00. 359 pages. Boston: Houghton, Mifflin and Company.

THE word "*Comuneros*" was from the sixteenth century onward a sign to conjure with in Spanish history. It referred to the revolt of the cities of northern and central Castile in 1520-1521, the last popular protest against the establishment of that monarchical despotism which had been begun by Ferdinand and Isabella and was completed by their Hapsburg successors. If in later centuries opposition was raised to royal misrule or oppressive taxation, the mind of the Spaniard reverted to those earlier days when the municipalities made their last despairing stand in defense of their medieval liberties. The tradition was carried even to America, and in Paraguay in 1730 and fifty years later in New Granada (the modern republic of Colombia) insurrections against unpopular governors or government policies assumed the name of the *Comuneros*.

Professor Seaver has just produced a notable study of the "original" *Comunero* movement as staged at the beginning of the reign of Charles V. It is the story of the internal history of the revolt — "few Castilians in 1520 had any interest in, or knowledge of, affairs in . . . the world outside" — presented with a sureness of touch and a fullness of detail that make it easily the outstanding work on the subject. The author has written directly from the sources, and only from the sources, so that his book becomes to that extent an entirely fresh and original contribution to our knowledge of this episode. He also reveals a familiarity with the terrain of the revolt, with the country and churches and castles about which he writes, that adds much to the interest. He has evidently tramped over the ground himself, and the photographs and drawings that illustrate the book are mostly his own.

The "communists" of Spanish history had nothing to do with the social theories of present-day radicalism in Spain. In fact, the *Comunero* movement, at least in its inception, was a decidedly conservative movement, a protest against foreign innovations in government, a defense of vested interests of the native aristocracy and of the great chartered towns. The *Comuneros* were the men of the *Comunidades* or free cities, and in so far as they were endeavoring to gain for the cities a decisive voice in the governance of the nation they anticipated some of the ideas of the Paris Commune of 1871.

The performance, however, was a disheartening one. The insincerity of the representatives of the absent king, the pride and pigheadedness of the Council of Castile, the half-hearted loyalties of the grandees, the lack of effective, or even of honest, leadership in the popular party, all pointed to ultimate disaster. The rebellion was in every respect a failure; "the Communes of Castile . . . after a good start had a bad ending, and exalted, beyond what it had previously been, the power of the King whom

they desired to abase." (López de Gómara, as quoted in Merriman: "The Rise of the Spanish Empire," III, 67.) Indeed, we can see today that permanent success was scarcely possible. The signs of the times were against it. The people were unprepared to assume the rôle in the national government to which they aspired. Divided among themselves, obstructed by a selfish nobility, deficient in public spirit, they were lacking in most of the virtues essential to a popular régime. For the time being the stability of the State, if not its survival amid the political and religious antagonisms of sixteenth century Europe, depended upon the maintenance of a centralized royal absolutism.

The writer's style is vivid and energetic, and the narrative is unfolded with a good deal of dramatic power. The manner in which his material is organized, it is true, seems to be somewhat unnecessarily involved, so that the lay reader may sometimes be at a loss for a clear comprehension of the more general development of the story. Taken altogether, however, the book is a most excellent performance, for which students of Spanish history are profoundly grateful. The history of the Revolt of the *Comuneros* need not be written again.

CLARENCE H. HARING

### *Book Printing: 1918-1928*

PRINTING OF TO-DAY, by Oliver Simon and Julius Rodenberg. \$8.50. 159 pages. New York: Harper and Brothers.

HERE we have 122 representative specimens of contemporary book design assembled into sections, each of which is accompanied by an essay: Mr. Simon on "Printing in England," Mr. Rodenberg on "Continental Printing," and Paul Beaujon on "Printing in the United States." Aldous Huxley writes the general introduction in which he contributes a few random ideas on the trend of printing and type design.

A unifying thread running through the four essays can be picked up by the lay follower of printing: the authors' belief that the increased use of composing machines and power presses must lead to a "typographical revolution." Mr. Simon, noticing what is now going on in England (in Sweden, Denmark, and the United States as well), remarks, "It is surprising that the revolution has been so long delayed, and that certain exalted circles still consider machine-set and printed books as necessarily inferior. A visit to any printing establishment today would show that nearly all type is, as a matter of course, mechanically set, and the press work is achieved by machines driven by electrical power. . . . These modern machine-tools . . . cannot fail to influence Printing style, in our day and in the years to come." The high percentage of machine-set specimens presented by the compilers either supports this contention or shows their prejudice in favor of machine printing. It is, of course, a

much-worked truism that a radical change in a craft is reflected in the corresponding art. Architecture has felt the influence of structural steel and concrete, and it requires but little stretch of the imagination to believe with these critics that the art of book design must change with the almost universal advent of machinery and machine methods.

Mr. Huxley holds that it is not enough for printers to accept a change in the design of printing; they must go in search of it. How or where to seek he does not say but contents himself with remarking that printers live too much in the past and borrow too much inspiration from its master typographers. After all, he concludes, types must be legible and that necessary condition precludes any radical innovations, but that only shows that the change must be gradual. "The Communist must either turn Liberal or retire from business."

Both Mr. Simon and Mr. Rodenberg have, it seems to me, written very much to the point and presented a careful survey of printing in their respective provinces. Unfortunately Mr. Beaujon gets little farther than generalities. He points out that printing style in Boston, in New York, and in California are all different; that the American Institute of Graphic Arts chooses each year fifty representative books and puts them on exhibition in the principal cities; that the university presses "are leading the way toward a radical improvement of scholarship in publishing. . . . But these houses have not yet reached the level of the best foreign presses."

It goes without saying that "Printing of To-day" is well printed and that it should interest everyone who likes to read about books and typography.

J. D. C.

### *The Herald*

THE JAMES GORDON BENNETTS, FATHER AND SON, by Don C. Seitz. \$5.00. 405 pages. Indianapolis: *The Bobbs-Merrill Company*.

**P**REVIOUSLY Mr. Seitz has written the lives of Joseph Pulitzer, "recreator of the *World*," and of Horace Greeley, founder of the *Tribune*. Now he adds the story of the two dominant figures of the lamented *Herald*, the third great newspaper of the nineteenth-century New York journalism. Forty years ago — even as late as the beginning of the present century — the New York *Herald* was the one newspaper to which almost every ambitious reporter in the United States outside of New York turned ardent eyes.

James Gordon Bennett, Sr., by birth a Scotsman and educated for the Roman Catholic priesthood, founded the *Herald* in May, 1835, with a capital of \$500 and the experience of two previous failures. He cast tradition to the winds, for he conceived it to be his paper's duty to support no party but to record facts without fear or favor. "He wrote up Wall Street swindles and made no bones of using names." Within six months, Bennett was treated to, and published an account of, the first of many physical assaults upon himself, for the *Herald* often overstepped what were at that time deemed the bounds of propriety. "As the first American editor who refused to be a statesman or a party hack, Bennett was, of course, both a novelty and an offense."

For the first time a newspaper published a "money article," a stocklist of "thirty-two securities," a list of bankruptcies, church news and sermons, accounts of public dinners and social affairs. The *Herald* inaugurated the first ship news service in August, 1836, began using the telegraph in 1846 to get news of the Mexican War, and spent a half million dollars on a staff of sixty correspondents to cover the Civil War. Meanwhile the circulation multiplied even though the editor's popularity suffered until James Parton wrote of Bennett in 1857, "His paper is generally read and its proprietor universally disapproved."

For good reasons the son, who assumed control upon his father's death in 1872, spent little time in this country, preferring to run the paper from Europe. The Stanley story with its cryptic assignment to "Find Livingstone," his patronage of the De Long arctic expedition, the Paris edition of the *Herald*, the founding of the Commercial Cable System, are the high points of the younger Bennett's period. His well-known eccentricities and personal foibles receive ample, though restrained and somewhat gentle, treatment at the hands of Mr. Seitz.

The younger Bennett lived until 1918. Upon his death control of the *Herald* passed into the hands of the late Frank A. Munsey where it absorbed the *Sun* and later was amalgamated to form the present *Herald-Tribune*.

H. E. L.

### *Slaves and Rum*

ADVENTURES OF AN AFRICAN SLAVER, by Theodore Canot, originally told to Brantz Mayer, now edited, with an introduction, by Malcolm Cowley. \$4.00. 376 pages. New York: *Albert and Charles Boni*.

**A**FTER the Napoleonic wars came the illegal slave trade, the stench of Bonny River, Black Ivory, and the Gold Coast. Intervening years and then the World War followed by prohibition, furtive boats on the cold, gray reaches of the North Atlantic, and forbidden rum. Trades of a kind, these, spaced a century apart, but strikingly alike in motive and method.

Out of the pages of "Adventures of an African Slaver" comes the voice of a runner of the day, bold and reckless, who sailed the Spanish Main with black cargoes in defiance of the proclamations of winking governments. Golden sands fringed with jungle, fever, and pestilence; coral reefs and cruisers. These Captain Theodore Canot knew, and more. Bargaining and bribery, the favor of the Trade Winds, fattening slaves for market. Gold the gain. The life of an adventurer in silhouette as stark and sharp as the outlines of his black quarry on coral strands.

J. J. R.

### *Famous Editorials*

AMERICAN PRESS OPINION, WASHINGTON TO COOLIDGE, by Allan Nevins. \$5.00. xxvii+598 pages. New York: *D. C. Heath and Company*.

**U**PWARDS of 300 editorials are included in this comprehensive survey which begins with one on the impost or customs from the *Philadelphia Packet* of March 22, 1786, and closes with reflections on "the institution" (Continued on page 248)





## *The Grab Bag*

**I**N the January Review we chose to urge the Secretaries to use care in the spelling of firm names and cited as an example the name "Curtiss Airplane and Motor Company." The following note from Professor Charles H. Chatfield '14 emphasizes more strongly than our comment the necessity for care in the spelling of names: "The January number of The Technology Review offers me a temptation which I can't resist. In the first paragraph on page 159, mention is made of the common mistake in the spelling of the name 'Curtiss.' So far quite correct, but the name of the company is the Curtiss Aeroplane and Motor Company, Inc., and not the Curtiss Airplane and Motor Company. . . ."

Research in the first issue of The Review (January, 1899) revealed the following information about the present Secretary for the Class of '75: "H. L. J. Warren, who has been on the missing list for several years, called on the Secretary one day during the summer; he was to send in a report of his wanderings, and his address, but so far nothing has been heard from him." Mr. Warren has long since made good that promise to his Secretary, and his notes now are full of his wanderings and those of his classmates. — It was with regret that the Editors announced the death of Richard A. Hale, Secretary of the Class of '77, in the January issue, page 157. No notes appear in this issue because no successor has yet been appointed. — Further facts about the beaver, "the most interesting animal in America," appear in the notes from Mr. Briggs for the Class of '81.

The President of the Class of '87 yearly sends a gift of California dates to the classmates. — Some interesting notes on wild animal life encountered on a fishing trip appear in the '91 Notes. Friendly bears and greedy chipmunks are featured. Unfortunately the same account records the death of the writer. Also in these notes is first-hand informa-

tion about the St. Francis Dam in California which caused so much destruction when it collapsed. It's been many a day since such an interesting yarn has been spun as that about the birthday party of a member of '91. — Professor Locke's travel report for this month features a trip into Asiatic Turkey from Constantinople. More red tape was unraveled than it takes to get an interview with President Coolidge.

The Secretaries of '99 are already preparing for their Thirtieth Reunion. They have concocted a scheme to put every member of the Class on the front page of every newspaper during the Reunion. A man bitten by a dog is not news, but if every man bites a dog, that's a scoop. Have the Secretaries of this Class forgotten that they left Arthur Hamilton half way to Europe in the November issue? Where is Arthur Hamilton now, and where is Hilda the lion hunter?

The Secretary of '01 has recovered from a temporary fit of depression, and regales his readers with an anecdote that nicely combines modern art with psychopathy. True to form, Dr. Rowe cannot let the Christmas season pass without a bit of meditation. — The former Secretary of '03 was recently presented with an electric clock for his services to the Class. It is appreciation like this that makes the secretary's lot a happier one. — Yachtsmen take notice of the '05 Notes. Mr. Davis has filled his notes with more news to interest them. We also wish to call attention to the appreciation of the late Gorham Crosby in these Notes. This is one of the best of the long obituaries that we have ever received in a set of Class Notes. Compared with the usual perfunctory notice, this sets a new standard. — A member of the Class of '07, the energetic Carl Trauerman, presents some suggestions for broadcasting stations to straighten out the confusion caused by the new allocations of wave lengths.

At last, and we think we may say *at last* with reason, the Class of 1916 has come to life. The Assistant Secretary (or as he chooses to call

himself, "your one-time Assistant Secretary") is responsible for the real news in the '16 column. Amusingly enough, the '17 Secretary in charitable spirit takes this issue to insert 1916 notes in 1917 news. He offers to conduct a guest corner or an orphan asylum for 1916 news and promises like cooperation from the Class of 1915.

Wedding notices fill the '21 Notes so that it leads the other classes for the cup. Carole Clarke will soon need a special secretary just to announce and acknowledge matrimonial results. Our congratulations to that worthy Assistant Secretary on the occasion of his own announcement. — The Class of 1923 has been missing from these columns this year and now brings to light notes on the Reunion held in June and its own matrimonial bureau. — The '24 Reunion promises big doings. Watch these columns for further announcements.

Eight Secretaries scheduled for this issue have failed to get in notes. The Class of '83 was represented last in the November issue. News may be sent to the Secretary of this Class addressed to David Wesson at 111 South Mountain Avenue, Montclair, N.J. The Secretary of '85, Isaac W. Litchfield at the Hotel Wadsworth, 10 Kenmore Street, Boston, is missing for the first time this year. The Class of '93, whose Secretary is Frederick H. Fay, in the Waterman Building, 44 School Street, Boston, has had no notes since the July issue. We understand that Mr. Fay has been ill. George E. Russell of Room 1-272, M. I. T., Cambridge, has not produced any notes since November for the Class of '00. The January issue held notes for the Class of '13, whose Secretary is George P. Capen of 50 Beaumont Street, Canton, Mass., and for the Class of '19, whose Secretary is Wilfrid O. Langille of 144 Acme Street, Elizabeth, N. J. The Class of '22 has not been represented since July. News or reproaches may be sent to Eric F. Hodgins at 8 Arlington Street, Boston. In January the Class of '25 made its last appearance. Its



Secretary is Frank W. Preston, who lives at 102 East 22d Street, New York.

The birth rate for the month is lower than that of last month. Eight births are recorded, four of which are boys. The Classes of '09, '14, '16, '17, '18, '20, and '23 report one birth each. From the Southwestern Association of M. I. T. comes the eighth, a boy, who must be credited to the Class of '18.

If weddings among the later classes continue to increase at the rate we have noticed in the last three issues, we shall have to list the class records in this column. While a cup may not materialize, recognition surely ought to be given.

## Deaths

Further mention of the following men, recently deceased, may be found in the notes of their respective classes:

MORRIS A. SMITH '75. Died in May, 1928.

GEORGE W. LEWIS '75. Died in October, 1928. Was an architect, interested in Technology affairs.

WILLIAM H. ATTWILL '87. Died September 1, 1928. His death was due to drowning when his car got out of control.

JAMES L. CORNELL '87. Died suddenly at his home on October 31, 1928.

'75 As these notes are hurried to the press on the last call, the President and Executive Committee have fixed on January 25 for the annual dinner meeting to be held at the Engineers Club, Boston. For six years the Class has had no get-together. This will be the forty-seventh annual meeting.

In response to inquiries, these data will interest. On our first appearance in September, 1871, ninety-one regulars and twenty-seven specials were enrolled, in all 118. During the next four years, first and last, seventy-five, or a grand total of 193 were associated with the Class. Of the ninety-one regulars in the go-off in 1871, twenty graduated in 1875, together with eleven who joined the Class after November, 1871. According to the records, of the 193 who were associated with '75 there are seventy-two still living, although but twenty-four have responded to repeated urgent appeals. Of the thirty-one who graduated in 1875, seven were alive on Christmas, 1928; Dorr, Goodale, Hibbard, Wilfred Lewis, Prentiss, Warren, and Webster.

Should all have moved serenely, Hibbard and his wife are enjoying a cruise de luxe on the Mediterranean, steaming from New York on January 30, on the *Transylvania*. They are to be gone three months.

Although on the retired roster, Dorr is well occupied on three special commissions in the Massachusetts Metropolitan Sewerage area which dovetail with his long service as Chief Engineer of the Sewer Department of the City of Boston.

While arranging for the Class Dinner, I learned that Lincoln spent the summer delightfully in Europe, returning in October. Squibob! the ideal Class Secretary-Historian should be a long distance mind reader to be properly on the job. Lacking in this desideratum, the boy should report haps of moment. Selah!

For Thanksgiving, the Prentiss clan assembled twenty-odd at the Holyoke home, and Mrs. Prentiss confided that

thirty-two of the Hubbards were booked for Christmas dinner. We had two congenial reunions recently. They were rather counting on Southern California after January, for two months or longer.

Returning from Thanksgiving in Cape May County, N. J., I stopped over in New Haven for a look-in on Pierce. We had an old fashioned talk fest, much enjoyed. He was about to go on the honor retired roster as the longest in service with the Union and New Haven Trust Company. On September 19 he will round the seventy-eight post, right side up with care.

Wilfred Lewis has apparent cause for umbrage with the President and Secretary, *in re* the wording of the brass plate for the Lanza Memorial, which he has had placed in the office of Professor Miller, Head of the Mechanical Engineering Department. This neglect is more seeming than real for Wilfred's generous endeavors are fully appreciated, as will be demonstrated at the annual meeting. For those who recall Gaetano Lanza it is good to hear Professor Miller and Lewis eulogize him.

For 1928, there were two deaths made known which have not been reported: in May that of Morrill Aspinwall Smith who was with the Class the first and second years; and George Wilton Lewis who died in October. Lewis was a practicing architect to the last, retained a lively interest in Technology and was early on hand for the annual get-together at the Engineers Club a year ago. — HENRY L. J. WARREN, *Secretary*, Greenfield Club, Greenfield, Mass.

'81 Following is a letter from Edward R. Warren, our mammalogist, regarding what he has been doing: "I am enclosing some of my latest publications. You see that I am still fooling around with the beaver. I believe I wrote you last spring that I was rather expecting to go to northern Michigan to investigate the beaver there for the School of Forestry at the Univer-

HERBERT A. RICHARDSON '87. Died on August 30, 1928.

HENRY W. WEEKS '87. Died on June 1, 1928.

MINER ROBINSON '87. No date given for his death.

FREDERICK C. MOORE '91. Died on December 3, 1928. Was associated with the Hartford Fire Insurance Company for many years.

GORHAM CROSBY '05. Died on November 12, 1928. Was a member of the firm of Ward and Crosby, patent lawyers.

ANDREW LAMBERTUS '26. Died on October 2, 1928, following an operation. Mr. Lambertus was a member of Course II.

sity of Michigan. The thing hung fire for a long while but finally went through, and I left here the last of June and put in the summer on the Upper Peninsula, remaining there until the middle of September when I returned to Ann Arbor and then home. It was an interesting summer and I am glad to have had the opportunity to see that region, even though I did not fall in love with it. I guess I have been in the mountains too long to appreciate a flat country. Now I am at home for the winter and, in fact, do not expect to go away next summer unless for a short time. My family were on Cape Cod all summer enjoying the salt water. My best wishes and the season's greetings."

He has specialized for some three or four years on the beaver and has written some very able and informative articles on it. His latest is entitled "The Most Interesting Animal in America" and was published in the *Scientific Monthly* of July, 1928. He also wrote an article entitled "Beavers in the Elk Mountain Region, Colorado," published in the *Journal of Mammalogy* for November, 1928. — FRANK H. BRIGGS, *Secretary*, 390 Commonwealth Avenue, Boston, Mass.

'87 President Giles Taintor is receiving the thanks of the members of the Class for the very generous gifts of fine dates which are raised in Indio, Calif., by Major Bartlette Hayes. This is the second year that he has remembered the boys in this manner, and it is needless to say that his thoughtfulness is deeply appreciated. — Granger Whitney writes that he expects to make a visit to friends in Boston and the vicinity over the Christmas holidays. — Victor I. Cumnock is now making his home with his sister at 32 Belmont Avenue, Lowell, where he would be pleased to see any of the Class who happen to be motoring in that vicinity.

Barbour reports taking a botanizing trip of 1700 miles on the California desert as far as the south end of the

1887 Continued

Salton Sea, taking pictures of flowers and so on and preparing lantern slides of the same. — George Draper has apparently returned to the good old U. S. A. as he has recently called on Lyman Farwell in Los Angeles and also on Frank Shepard in Denver. — Oren Hussey has forsaken the wintry blasts of New Hampshire and with Mrs. Hussey has gone to California and Honolulu to remain until spring.

It is with great regret that the Secretary announces the decease of five members of the Class since the last letter. William H. Atwill and his wife were accidentally drowned on September 1 when his automobile got out of control and dashed over a wall into the Potomac River at Washington. Dr. James L. Cornell of Piney Point Farm, Centerville, Md., died suddenly at his home on October 31. Herbert A. Richardson passed away on August 30 and Henry W. Weeks on June 1. The death of Miner Robinson has been reported by the concern with which he has been associated, but the date was not ascertained. — EDWARD G. THOMAS, *Secretary*, Toledo Scale Company, Toledo, Ohio. NATHANIEL T. VERY, *Assistant Secretary*, 96 Bridge Street, Salem, Mass.

**'89** Frank Hobbs was struck by an automobile on the evening of November 6 while crossing Commonwealth Avenue at Exeter Street, Boston. It was first thought that he was very seriously injured, but since then he has been recovering at the Massachusetts General Hospital and expects to be back home early in January. Although the injury would have been very serious for a person of less substantial construction and character than Frank, he seemed to be in his usual cheerful frame of mind when the Secretary saw him last. He will apparently make a fine recovery, which will be good news for everybody. — W. H. Kilham, *Secretary*, 9 Park Street, Boston, Mass.

**'91** It is with a feeling of great personal loss that the Secretary records the death of Frederick Campbell Moore of Hartford, Conn., on December 3, 1928. Fred was with Course X while at Technology, and I got to know him very well. We both went into the insurance business after graduation and through all these years we have been close friends. He was a man of the highest type and attainments, a Christian gentleman in every sense of the word. He was very fond of his old friends, especially his classmates, and the longer you knew him the more you appreciated his sterling character.

In his chosen field of fire protection and insurance he made a marked success. He was a close student in business, exceedingly thorough, and highly regarded by the Hartford Fire Insurance Company with whom he was associated for many years. He was ill only a few days, and just before he was taken ill he wrote a long letter to Barney Capen telling about his recent canoeing and fishing trip to

Nova Scotia. I wish that all his friends could read this letter, as it shows his love for the great outdoors and his kindness of heart. He called on Barney several times when he was in Boston. I will quote a few passages from his letter to show his interest in animal life: "There are lots of moose, deer, bear, mink, muskrats, wildcats, and some otter, beaver and other fur bearers. We generally see all but the bear and wildcats. They are very shy and even the natives who live in the woods seldom see either outside of a trap. I was fortunate enough to get a good view of a wildcat this trip. We were in the canoe in a stillwater overshadowed with trees, with a high gale blowing from him to us, so he did not wind us; we never make any unnecessary noise. He had drunk and was walking away from us. Finally he looked back, saw us, and stared for ten seconds and then quickly, but without panic, turned into the brush. Tawny brown, with a short bobtail, brown pussy cat streaks on his face, as big as a good Airedale, and a real competent looking critter I'd call him. They do not attack, but if you were to try to take a bone away from him I'll bet you would never forget the scrap."

"The bears' signs are all around. Every small rock has been rolled over by them to get the ants and grubs underneath. I saw one this trip (a rock) that weighed about 200 pounds. Here and there are bear trees. They come to these and scratch the bark and, standing up, bite pieces out of it. I know two of these and on each one the top of the scratches is about four inches higher than I can reach flat-footed. Some of those bears are real robust. We usually have very tame chipmunks around the camp, but this year a tame red squirrel turned up, a very unusual thing, and after he found that our tin pail contained huckleberries he showed up promptly every time we sat down to a meal. He would sit on the edge of the pail, lower himself down into it, grab a berry and sit on the edge of the pail and eat it, and then go for another, all within three feet of me. When we broke camp and went away I left a big handful of berries on the rough slab table, and the last I saw of him he was seated beside them jamming one after another into his mouth. He did not seem to have any cheek pouches, but the chipmunk would get his so full you'd think he had the mumps, and he would make the funniest contortions to stuff the last morsels in before he scurried off to his hole under the hemlock. On these trips I sleep on the ground, with boughs under me when they are handy and without 'em when they ain't. I sleep anyway the first night out as well as at home and every night thereafter. I have the reputation of being the best sleeper any of my guides ever saw, and one of them said he never saw anybody enjoy the woods as I do."

The following is from a Hartford paper: "Frederick C. Moore, Assistant Secretary of the Hartford Fire Insurance Company and former President of the

Insurance Institute of this city, died of pneumonia Tuesday morning at his home, 48 Whitney Street, after an illness of two weeks. Born in Wilmington, N. C., in 1868, Mr. Moore first came to Hartford in 1897, five years after his graduation from the M. I. T. He served for several years in turn with the Middle States Inspection Bureau, an insurance organization, and with the Factory Insurance Company. In 1903 he became associated with the Hartford Fire Insurance Company. He served in the fire protection department for sixteen years, becoming an officer of the company in 1920. He was considered one of the ablest fire protection engineers in the country. While at college he made a special study of chemical engineering and employed his knowledge in a mechanical line of the insurance field.

"Mr. Moore was greatly interested in hunting and fishing. He also made a special study of birds and was a member of the Bird Study Club of Hartford. He was a member of the National Protection Association, the Engineers Club, and the Hartford Golf Club. He was President of the M. I. T. Club and one of the oldest members of the Insurance Institute of Hartford which he served as Vice-President and later as President. He attended the Asylum Hill Congregational Church. Besides his wife, Mrs. Angie (Towne) Moore, he leaves a daughter, Ruth Moore. The funeral will be held Friday afternoon at two o'clock in his home. Burial will be in Cedar Hill Cemetery. Richard M. Bissell, President of the company, upon hearing of the death, paid the following tribute to Mr. Moore: 'He was a fine man and had no superior in the United States as a fire protection engineer.'"

The funeral was held at his home in Hartford and the Class sent a floral offering. The Secretary received the following letter from Mrs. Moore: "Dear Friends of the Class of '91, M. I. T.: My daughter and I wish you to know how very much we appreciate the beautiful wreath of chrysanthemums and roses which you sent to my dear husband on Friday. He always thought so much of the Class of '91 that it touched me more than I can tell you that you were thinking of him then. Your kindness and thoughtfulness mean so much to us now. We do indeed thank you."

Charles N. Fitts has been elected President of the American Institute of Steel Construction. A Boston paper has the following to say about his attainments. He is Treasurer of the New England Structural Company, of which company Walter Douglass of our Class is President. "Charles N. Fitts is well known, especially in the East, for his influence in the business and social activities of the structural steel industry, as instanced by his prominence in the old Bridge Builders and Structural Society, and the Structural Steel Board of Trade of New England, as well as in the national organization of which he is now the head. Coming to Massachusetts from Norfolk, Va., in his youth, Mr. Fitts



1891 Continued

took a course in technical training at the M. I. T. Entering business life as business manager of the *Somerville Citizen*, he subsequently became connected, in 1895, with the Norton Iron Works at Everett. Three years later this company was succeeded by the New England Structural Company. For several years Mr. Fitts served as Assistant Treasurer of the company, in charge of contracting. Since 1914 he has been Treasurer of this company, which has developed from small beginnings to ownership of the largest fabricating plant for structural steel for buildings and bridges in New England, furnishing more than eighty per cent of such steel for all buildings erected in metropolitan Boston as well as a large proportion in other parts of New England."

The following is quoted from a letter from Shattuck at Beverly Hills, Calif., to Will Palmer. "You ask about the St. Francis dam. It has, I believe, been finally settled that it will never be rebuilt. Apparently the dam was properly built and should have lasted forever, but the nature of the bedrock was such that it softened and finally gave away from the great weight of the dam and from the pressure of the water above it. The builder of the dam, William Mulholland, had previously built nineteen or twenty other dams and all of them have been examined and reported almost perfect. The City of Los Angeles has agreed to pay all damages caused by the disaster and has done an immense amount of work in putting the devastated country back into somewhat normal condition again. Of course, the city cannot bring back to life any of the almost four hundred persons who were swept into eternity, but it is attempting to do all that is possible for those who remain.

"My son, George, and his friend, Bill Guthrie, are both first rate and still growing. George has for a long time wanted to try his hand at the building business, so he completed a two-apartment, Spanish-type house a short time ago. Out here it is called a duplex, being an upper and a lower flat. It is of stucco with tile roof and has all modern improvements such as electrical refrigeration, gas for heating and cooking, exhaust fan over the range, tile bath rooms, and so on. He is trying to sell it, but in the meantime he has rented one flat so that he is making interest on the investment. He can rent the other flat at any time, but he is holding off a while to see if he can sell it.

"Charlie Garrison and Mrs. Garrison were in Santa Barbara most of the past summer, but we did not see them, although we had certainly intended to do so. Garrison's son, Robert, is chief engineer for an oil company out here, and I believe has done remarkably well and holds a very responsible position. He was married about two years or less ago, and this summer a little son put in his appearance so Grandad, Charlie, and Grandma, Mrs. Garrison, stayed with the young folks all summer. Consequently they did not go far away from Santa

Barbara, but Charlie says they met many charming people there and had a very pleasant summer. George Hooper and his daughter were in Santa Barbara for the summer and the Garrisons had several pleasant visits with them. Mrs. Shattuck and I drove up to see them, about a week before he had planned to leave for the East, but he had departed earlier than he had expected in order to meet his daughter and Mrs. Garrison's sister, who had been spending some time at Estes Park in northern Colorado. Charlie said that they drove home to Cambridge in fourteen days.

"Mrs. Shattuck and I drove up to Oregon, Washington, and Idaho in the latter part of September. My cousin from Kansas who is out here for a while wanted to visit my brother in Spokane and the other in Idaho, so we drove her there. I had just got a new LaSalle sedan well broken in, so the trip was very enjoyable although we have been over it several times. Since we returned we have spent a few days down on the desert at Palm Springs and Indio, among the date and grapefruit trees. It is only about 145 miles from here, almost due east, with pavement all the way, and we make the trip in about four and one-half hours. We are both very fond of it and are considering buying a place there."

The following article appeared in the *Detroit News* regarding our friend and classmate, Charlie Hammond, whose death was noted in a previous issue of *The Review*: "Charles F. Hammond, Detroit business man, died suddenly at his home. . . . The cause of the death was believed to be acute indigestion. Mr. Hammond was sixty years old. Until five years ago he was President of the Hammond-Standish Packing Company. He was born and always lived in Detroit and received his education at the Michigan Military Academy, Orchard Lake, the M. I. T., and the Harvard Law School. Since his retirement from the active direction of the packing business, Mr. Hammond had busied himself with handling the Hammond estate and in various charitable enterprises. The estate, which was a wealthy one, was founded by his grandfather, George H. Hammond, inventor of the refrigerator car, for whom the city of Hammond, Ind., was named.

"During the Spanish-American War, Mr. Hammond was chief master-at-arms of the gunboat *Hosemita*, the crew of which was made up of prominent young Detroiters. He was a member of clubs, including the Detroit, Detroit Country, Bloomfield Hunt, Detroit Boat, and the Union League Club of Chicago. Members of the family are the widow; one son, Charles F. Hammond, Jr.; two daughters, Ethel Hammond and Mrs. Charles A. Belanger; a sister, Mrs. E. A. Skae of Bloomfield Hills; and two brothers, Edward P. Hammond of Detroit, and George Hammond of Jacksonville, Fla."

Barney Capen sent one of his usual birthday letters to Jerry Campbell and the following is from Jerry's reply: "Ten years ago I had a very remarkable

birthday. I was Commanding Officer in a district in France. Upon taking the post I was given two secret service codes. One could be used by any agent whom I might appoint, and my adjutant coded and decoded many messages every day. The other one I could divulge to no one on pain of death. On the morning of November 9 upon arriving at headquarters they told me I had a message in code which they had been unable to decipher. Handing me the message I discovered symbols for the extra secret service code, and upon decoding it found that the enemy had applied for a cessation of hostilities. At that time we had no idea in France that the end was so near. We could not allow ourselves or any of the officers or men to think of such a thing as getting slack for a moment. Shortly after getting this wonderful news an officer from the French Colonel's headquarters waited upon me with the request that I should visit him as soon as possible. As soon as I went to his room he put every one out, closed the door, fell on my neck and wept. He had served his life in the French army and was so happy that the end had come with France a victor, as he told me, he was ready to die. As soon as he had recovered and I was leaving the room, I mentioned to him that it was a wonderful thing to happen upon my fiftieth birthday, whereupon he said he would like to do the honors and invited me to dinner that evening. There were present all the high officials, both civil and military, for some miles around, and we had a wonderful dinner party with much gayety although the Colonel and I could not tell them why we were so happy." — HENRY A. FISKE, *Secretary*, Grinnell Company, 260 West Exchange Street, Providence, R. I.

'95 At last relief! It is almost impossible to estimate the joy occasioned by the receipt of the first letter in many months by your Secretary with news from a member of the Class of 1895. A Class Secretary well knows that a friend in need is one indeed, and Billy Hall has qualified when he inquires whether or not your Secretary has died. True, several editions of *The Review* have passed into history without recording the welfare of the Class, and the fact is lamentable, yet it may be forerunner of a new era when one member voices his disappointment over the current omissions.

There are now at Technology the following 1895 men: Hall in chemistry; Barrows in hydraulic engineering; Lawrence in electrical machinery; Drisko in physics; Dickerman in industrial research; and these alone are surely a good nucleus for a Technology Club of 1895. Hall enjoys his life at the Institute watching the careers of the students and keeping young through his contacts with highly intelligent youth. Some of his problems are the more interesting in his attempts from time to time to make the sons of Booth, Drisko, Canfield, and Whorf better men than their



1895 Continued

fathers were at the same age. — Dickerman is engaged with Professor Bassett in municipal and industrial research.

The New York Class of 1895 held their regular monthly luncheon at the Railroad Club, 30 Church Street, on Thursday, December 6. Those attending were Belknap, Brackett, Canfield, Claflin, Coddington, F. B. Cutter, Donham, Drake, Gardiner, Hannah, Moore, Huxley, Nichols, Park, Swope, and Wolfe. Gerard Swope, President of the General Electric Company, had as his guest Dr. S. W. Stratton, who came to New York from Boston on a battleship that was making speed tests. Dr. Stratton gave the Club a very interesting talk on conditions at Technology. — Information as to the final standing of the 1895 Dormitory Memorial Fund is as yet not available. The report will be given to The Review when completed. — L. K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass.

'96 At the time these notes are being written, the spirit of Christmas is on the Secretaries. Readers will recall that Dr. Rowe, our model Secretary, became imbued with the spirit of Thanksgiving and spread gratitude all over his flock. The natural expectation is that at Christmas time he will go even further and provide a class Christmas tree. However, the '96 Secretaries, while possessing the spirit, have not the means to go that far and will have to content themselves with broadcasting Christmas greetings and good cheer to all classmates through the medium of The Technology Review.

Greeting cards received from Charlie Hyde and his family postmarked "Paris, France" indicate that they are having an enjoyable trip in Europe. Charlie will be due to write a travelogue for the class notes on his return. Myron Fuller, likewise, has sent Christmas greetings and best wishes from himself and Mrs. Fuller. They are enjoying revisits to familiar Mediterranean ports and are also making calls at new ports on the Mediterranean and the Black Seas, with trips to the earthquake regions of Greece, the part of Asia Minor from which the Greeks were deported by the Turks, and Bucharest and the Danube in Rumania. The issue of the Brockton, Mass., *Enterprise* of December 14 contained an interesting letter from Fuller written from the Greek port of Corfu on the Ionian Sea. Their route from that port included Algiers and Casablanca, and then they would head back to New York. A rather humorous episode occurred while they were at Constantinople as the result of their desire to make a boat trip of forty miles followed by a railroad trip of twenty-five miles to visit Brusa at the base of Mount Olympus. They found themselves enmeshed in a tangle of red tape which required traveling visas, photographs, and the filling out of interminable forms which covered their pedigrees and life histories. They had to establish actual residence by stopping at

a hotel for meals and lodging. These preparations required a full day of strenuous activity. Their trip to Brusa was very pleasant, but when they undertook to return after staying in Brusa over night they found that they were up against the rules of the Mohammedan Sabbath. Their train left at 7:30 A.M., whereas the Police Department from whom they would have to obtain their travel permit for return did not begin to function until 9 A.M. This problem was solved by substituting an automobile for the twenty-five miles of land journey, but even then they were put very much on edge because the police permit was not placed in their hands until nearly 10 A.M. which gave them just one hour to make the boat at 11 A.M. over twenty-five miles of mountain road. However, they made the boat. If they had not made it, they would have been stranded in Asiatic Turkey and would undoubtedly have had more interesting adventures. Even when they arrived back in Constantinople they were unable to go directly to their steamer, but had to unravel some more red tape with more photographs and an official permit. Actually the trip to Brusa, which consumed less than twenty hours at a cost of something like \$7.50, had taken the entire time of a man for two days to attend to the red tape and an expenditure for fees, photographs, and incidentals of more than \$30.

The Boston *Post* for December 2 contained a cut of Russell W. Porter in action manipulating a telescope. He is connected with Jones and Lamson of Springfield, Vt., and his latest job is in connection with the designing and building of the world's most powerful telescope in California.

A letter from Louis Morse reports that Con Young and his wife spent a week with the Morses in York, Penna., before they sailed for their European trip. Incidentally, the Secretary has received a call from Louis Morse, Jr., who is now in his second year in Technology and is a real live boy. His latest job in Technology activities is that of manager of the Information Service of the Technology Christian Association. The Secretary wishes that any other classmates who have boys at Technology would urge them to make a call on the '96 Secretary.

Lambert N. Whitney has received a promotion in the New England Telephone and Telegraph Company. Effective January 1, the territory of this company will be divided for operating purposes into two areas each having its general manager and complete staff. Over these two divisions which are practically two companies is an operating Vice-President with Whitney as Assistant Vice-President to advise his chief in respect to broad commercial policies. Whitney will also be responsible for certain commercial interests that affect the policy of the companies as a whole, such as the development and application of rates, and so on.

Classmates may have read in the December issue of The Technology Review the very interesting account by Assistant Dean Lobdell of his transcontinental

automobile trip last summer, in which he made special mention of the town of Malta, Mont., which possessed mosquitoes bigger than horseflies. Furthermore, this town in the Milk River Valley is in the heart of the gumbo belt, and the longest single stretch of unimproved road which Lobdell encountered in Montana was about ninety miles, beginning at Nashua and extending to a point twelve miles west of Malta. Apparently Malta is a town which impresses itself upon travelers. Classmates will also remember that it has another mark of distinction in that it is the abode of George Stratton, who is engaged as government engineer on the vast irrigation project centered around Malta.

The Class has arranged for continuing a contribution for the benefit of Edwin Palmer for another year. His mother reports that he is getting on very well at Browne and Nichols School, and is being aided greatly by Dr. Westbom's massage treatments. However, about the middle of October he had a sudden attack of asthma and was in bed off and on for two weeks. Dr. Rockwell worked hard and successfully over him and in four weeks he was able to return to school. He kept up with his school work even while he was at home, and by Thanksgiving he was fully recovered and back at school in good condition and also continuing his massage treatments. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

'97 We are indebted to Professor Tyler, who sent us the following clipping from the *Mathematical Monthly* for October, 1928: "At its commencement exercises in June, Dartmouth College conferred the honorary degree of Doctor of Science on Professor Charles N. Haskins of the Department of Mathematics. This was an expression of appreciation for his work in connection with the building of the new Baker Memorial Library dedicated at that time." — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass. CHARLES W. BRADLEE, *Acting Secretary*, 261 Franklin Street, Boston, Mass.

'99 After due consideration and deliberation it has been decided to hold the Thirtieth Reunion at the Hotel Griswold, New London, Conn., on June 14, 15, and 16, 1929. It is sincerely hoped that each and every class member who can possibly arrange to do so will attend this reunion, bringing with him his wife or his children or both. Already several of the members have indicated their intention of being present "if alive." One of my correspondents has informed me feelingly that he will be there unless some unsurmountable incident prevents, that he longs to be one of a crowd that grew up in the "Gay Nineties," and he predicts that we can enjoy ourselves once more

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in our own way, the younger generation to the contrary notwithstanding. I agree with him.

Your Secretary and the committees are conniving in order that you shall have a memorable reunion. They will be aided and abetted by Charlie Corbett, who is in charge of publicity. He will see to it that you know all about the impending plans, and that you have no opportunity to forget either the time, the place, or the girl. Charlie is the first Vice-President of the Advertising Club of Boston, and his picture was published with other club officers in the *Boston Herald* on December 2. It is a mighty good picture, and as his publicity is as good as his picture you will have difficulty in withstanding his persuasive pleas to cast dull care behind for a day, even were you minded to so do. Charlie's modesty prevented him from mentioning his election to the first vice-presidency or sending me the picture, but a good friend sent it along. I would be hard put to it if good friends were not legion.

Albert Nathan tells me that I have raised such a din in my clamor for news (Nathan never ran a column or he wouldn't say a word) that he entirely overlooked reporting the fact that he had beguiled into his life as his partner, a Harvard man. He says that in spite of the old adage, "You can tell a man from Harvard, but you can't tell him much" they have lived together in brotherly love and friendship. If that isn't news the Gospel is wrong about the lion and the lamb.

Nathan feels that as long as I am so everlastingly dinning for news that I should define my policy. He says that if a dog bites a man it isn't news, but if a man bites a dog it is. He also indicates that this is not original with him, but he read it in a book. But he thinks it will help me to define a policy. To illustrate, he suggests that every '99 man bite a dog on our Thirtieth Anniversary next summer, and thereby get the whole Class on the front page of every newspaper in the universe. This is so unusual a suggestion that it will have to be put up to the management of the hotel. They may belong to the anti-vivisectionists or the Society for Prevention of Cruelty to Animals, and they may not want dogs bitten at their place. At any rate, it is Nathan's suggestion, and he can bite the first dog or bite the dog first, and we will follow up the matter later.

Burt Rickards who is Director of Public Health Education of the New York State Department of Health is giving regular radio health talks from Station WGY. The last one I happened to hear was "A Midsummer Day Dream" which was abstracted in the December number of *The Technology Review*. The abstract was well worth clipping for future reference, for if summer comes, can vacation be far behind? The wisdom Burt dispensed and the warnings would benefit all who read, especially if one's friends be enamoured of the beauties of the ubiquitous poison ivy and ignorant of its sting, and present one with table

decorations, because the leaves are such a beautiful color. In Burt's last talk, abstracted in a recent issue of the *New York Times*, he hands out even more pertinent advice to his contemporaries about arteries and eyes. He suggests the wisdom of a health examination once a year on one's birthday so that one shall not forget. The advice is excellent, but men have been known to forget their wives' birthdays—how much more likely one will forget his own.

From Chicago comes the word that G. A. Pennock will become assistant works manager of the Hawthorne Works of the Western Electric Company on January 1, 1929. Pennock doesn't know whether he deserves the promotion, but he has been there long enough so he ought to have it.

As a class we are not doing so badly. With Corbett's picture in the rotogravure section of the *Boston Herald*, Burt Rickards's voice going over the air periodically, and Clancy Lewis doing things in Washington State, though he has failed to report on them recently, and others of our clan carrying their candles aloft though too modest to report thereon, it can truly be said that the Class of '99 is not exactly hiding its light under a bushel. But if our light is to continue to shine other members will have to come to my aid or else as news-gatherer for the next issue I shall be obliged to repeat or improvise, and neither procedure is popular among editors or victims—but on you, Readers, I place the burden.

P. S.: Who will bring the dog?—W. M. CORSE, *Secretary*, 810 18th Street, Washington, D. C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

'01 From the *Iron Age* of December 13, I find that F. Ward Coburn has been elected a director of the E. and G. Brooke Iron Company of Birdsboro, Penna. These be glad tidings. My most recent contact with Freddy Coburn has been through the person of his son who, after a highly creditable career as an undergraduate at Technology, has recently joined the group of the young Alumni. Birdsboro does not seem plausible somehow when one considers the dominant influence of the Palatinate in the state which William Penn gave to the Union. There is a lightness about it, further, that but ill accords with what young Freddy related of old Freddy. However, we are having an Indian summer and I, too, feel the stirrings of the springtime which but ill accord with the calendar. Winter will really come after the New Year.

Which leads me to think. Christmas will be with us in a few days and thus I may take this occasion to extend Christmas greetings to the Class. Yea, verily, even unto him who eschews such evidences of a senile sentimentality. True, they will be belated in their material arrival, but for this I can blame him who in country parlance is designated as "Ye Ed." Nevertheless, my message goes

ringing forth by a slower but more certain route than that offered by the latest menace to our budding culture.

And speaking of Christmas, everyone tells me now that the good old simple and ruinous practice of exchanging gifts at this time is becoming obsolescent and will soon be obsolete. I must confess to a feeling of regret, even though in years gone by, following the convention left me impoverished and thus embittered for many subsequent months. The gradual removal of the simple, gracious practices of the bygone day from the current of our workaday life seems to me a thing to be deplored. Formal drinking, cultivated by our courteous forbears, has become just plain drinking—an exercise devoid of grace and charm, and frequently no more than a prosaic test of endurance. It makes me think of a story which chanced my way recently. One of the physicians in an insane asylum, or as it is more happily called today, an institution for mental diseases, was passing through a ward and saw an inmate gazing intently at a piece of paper. He paused and asked the patient what he was doing, receiving the reply that he was painting. "Why yes," said the doctor, "so you are, and what is the subject of your painting?" "The children of Israel passing through the Red Sea," replied the patient. "True, true," said the doctor, "and very graphic, but where is the Red Sea?" "Why that has retreated," said the patient. "To be sure," said the doctor, "and where are the children of Israel?" "Why they have passed over," said the patient, "I like something neat and simple."

Turning from this regrettable evidence of decadence, I pick up a long clipping headed by a genial portrait of George F. Fisk who was noted in these columns a short time ago when he became Commissioner of Public Works for the City of Buffalo. The present article is a long one, an intimate, personal interview in which the Commissioner for the moment forgets himself and becomes the man. I cull at random. "He regrets that there were no dormitories at Boston Technology when he was there. In those days students boarded wherever they could . . ." This sounds rough to me, but thanks to a member of the Class and a few other interested Alumni a percentage of the student body will no longer be subject to the vicissitudes of the small of the Back Bay. George says further, that Buffalo is the finest city in the country to make a home in. I hope this may goad some of the members of the Class to articulate protest. Later on we learn that photography is one of George's hobbies, and that he has acquired many pictures of places he has visited and of his son and daughter in every stage of their childhood. We can picture the Commissioner suitably attired, I trust, seated before the roaring log fire with such adjuncts as taste and opportunity offer, reminiscing happily over a group of these mementos of the past. How many of the other fathers in the Class, and there are many, will fail to respond to this picture of domestic



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comfort? George also acknowledges that he reads a great deal and among his predilections in literature are the biographies of well known business men. I, myself, have been an amateur for many years in the literature of crime, and I should be glad to exchange. Certain of the members of the Class, at least, will respond pleasantly to the fact that George finds relaxation in the game of bridge. The attention of the hard-boiled contingent is called to this fact and I would suggest that we begin to date George up now for sundry indoor sports which will be a feature of our next reunion in 1931. George has promised to be there, and I know this will be an added incentive to the never flagging few.

A brief word from Ellis Lawrence who still continues in his varied activities in Portland, Ore. For many years Ellis has been beautifying the Pacific slope and apparently has added landscape architecture to his armamentarium, as among his partners appears a Bean. Bill Holford continues as the silent partner — silent, at least, as far as I am concerned — while the quartet is completed by an illiterate relative of mine who spells it "Allyn." I should infer that in this gathering there were the makings of close harmony. Ellis writes that he has one lad who is now headed for Technology. I hope that when he reaches there he will look me up and convince himself that his father has one respectable associate dating from his earlier boyhood days. Conference with Freddy Coburn's olive branch will give him the proper technique of approach.

Matthew Cushing, an ornament of Course IX, is in Saratoga, Wyo., and gives his present occupation as that of a cattle raiser. That is not what they raise in Saratoga, N. Y. Western communications modify tastes. I hope that this meets the eye of Davis R. Dewey, who has always maintained, and I believe with some measure of justice, that Course IX gave the broadest training of any of the conventional courses in Technology. Certain of the extra-curricular activities were probably a little more liberal but there is still a lot to be said for the course that fathered the Walker Club in its halcyon days. — ALLAN W. ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

'02 Martin Hamblet is with the Johns-Manville Corporation, being manager of technical research and development at their works at Manville, N. J. Hamblet mentions that one of the pleasant features of his new location is that it brings him into close association with our classmate, James Driscoll, who is chief chemist for the concern. — Jimmie Brown and his wife are spending the winter at Beverly Hills, Calif., where their address is 627 North Foothill Road. — Redfield Proctor has been chosen President of the New England Council, an organization in New England to promote the welfare of the New England States.

While at this writing June seems far off, with the Christmas holly decorating the windows and the rigors of a New England winter hardly started, we can announce definitely that the annual outing of the Class will be held June 14 to 16, at our old haunt, The Riversea, at Fenwick Point, Saybrook, Conn. As the accommodations of The Riversea (formerly The Riversea Club) are limited, classmates are urged to register their attendance at the earliest possible date. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

'03 After a business meeting of the Class at Marion last June, a number of the Class were commenting on Aldrich's splendid devotion to a hard job in holding on as Acting Secretary and Secretary of the Class for ten years, and somebody said, "We ought to recognize it in some fitting way." Instantly hands went into pockets, and so many bills were thrust into the new Secretary's hands in about two eye flickers that he was somewhat dazed. When the smoke cleared away he was left with a goodly sum, and instructions to buy a suitable gift from the Class. The most pleasing suggestion was of an electric clock, and it was found that there was money enough, so one was bought. With a bodyguard of Haddock and Gleason, the Secretary surprised Aldrich and his wife one evening in October, presentation and acceptance speeches were duly delivered (with the clock), and "a pleasant evening was enjoyed by all."

Word was received from Beverstock in the fall, that he is in the contractors' machinery business in Los Angeles and San Francisco, has a son in Stanford University, and that "collections are rotten and jack rabbits are poor." — Cushman dropped in on Bateman at Claremont, N. H., early in the summer, and found him looking about as he did twenty-five years ago, barring the fact that he is purchasing agent for the Sullivan Machinery Company, and most any one knows that job makes any one hard boiled. Bateman has been with this concern ever since July, 1903. Wonder how many more of the Class have stuck with their first choice as long.

King was seen soon after the Reunion, and expressed sorrow at not being able to be there. — Dr. G. F. Loughlin '03 of Washington, D. C., of the United States Geological Survey, visited Denver, Colo., during the middle of July and conferred with C. W. Henderson, district engineer, and B. S. Butler, in charge of the Government Survey in Colorado. At present surveys are being made on the east and west sides of the Mosquito Range, near Leadville, and in the Ouray-Telluride-Silverton districts, and before this season is over it is hoped to reach Creede and Lake City. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 35 Harvard Street, Worcester, Mass.

'05 A somewhat inaccurate item in the November Review brought a correction from Carl Graesser. "About the *Wadum*, Indian class boat which you referred to in the last Review, I am only the crew as it is sailed by my fourteen-year-old boy. He had a very successful season. Six of these boats sailed every day during the Larchmont week, these being among the two hundred, including the *Resolute* and *Vanitie*, which started every day. He took the Junior Cup, the cup for his class for the week, and, of course, a few firsts and seconds. Right here I might mention that Phil Darling has a thirty-foot Crosby Cat which was present in Larchmont Harbor the last two days of the week. Phil and I attended the Commodore's dinner Saturday night and after a lot of inspiration, took the cup to Southport that night. There was a wonderful moon, and Phil insisted on sailing back. Phil prides himself on being somewhat of a navigator, but I noticed that when we came off Southport about four o'clock Sunday morning, he had to depend on three or four kids, fourteen years old, to take him into our harbor. Anyway, it was quite an interesting week."

"You probably know about the Midget Championship of Long Island Sound which was sailed at Manhasset Bay the latter part of the summer in Star boats. Foster was one of the winning crew of three and was on the boat to which the bucket was tied. Naturally, I am quite proud of this, as I would rather have him be a sailor than about anything I know of. Once in a while I crew for him and it is needless to say that I am bossed as I have never been before in my life."

"I was in Boston over the week-end and meant to call up Charlie Boggs but did not get around to it. Incidentally, I took Foster and his cousin, who is at Chauncy Hall, over to Technology Saturday morning, introducing them to Professor Miller, Professor Smith, and others. Foster is registered at Dartmouth, but living almost under the shadow of the Yale bowl, I do not know how it will come out."

"About a year ago the Consolidated Ashcroft Hancock Company, Inc., was organized, this being a subsidiary of Manning, Maxwell and Moore, Inc. In July we purchased the American Schaeffer and Budenberg Corporation in Brooklyn, so that we now have the Ashcroft Manufacturing Company and The Consolidated Safety Valve Company in Bridgeport, the Hancock Inspirator Company and the Hayden and Derby Manufacturing Company in Boston, and finally the American Schaeffer and Budenberg Corporation with plants in Brooklyn and Worcester. My job is Vice-President in charge of manufacturing, which is very interesting, of course."

Roll Pritchard is a yachtsman, also, as we have once or twice indicated. He writes: "We had a nice trip last summer in the *Loon*, four of us, spending a week down in the Bay of Fundy, touching St. Johns and Digby, Nova Scotia, also spending another week down in Nan-

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tucket Sound." In a New York paper appeared a notice of Roll's older boy's engagement. Wonder how it feels to be a grandfather? Are there any now? Mrs. Elizabeth Hall Middleton Maddock of Trenton, N. J., has a married daughter, we are told. Shouldn't we have a prize at the next reunion for the first grandparents?

Dan Harrington's only bit of news was of a note from Bob Lord, a happening important enough to record. — We were pleased to learn of Norman Lombard's election to the Alumni Council to represent the Technology Association of Northern California. — Frank Payne is going to Japan, whether on business or pleasure is not stated. He writes: "I wish you were going along with me, Ros, especially on account of the Imperial Japanese Navy. Your artful Japanese manner, I am sure, would get me in anywhere." Eh, what! — George Jones's boy is at Amherst. George told him to look us up when he came down to the game, but, as is so often the case, the youth failed to be interested in his dad's old friend. But Bill Green's boy has done the proper thing, anyway. — We've had nice letters from John Damon and Fred Poole but neither said a thing.

We had heard nothing from Will Houskeeper since he left the Bell Telephone Laboratories, New York. He writes from South Orange, N. J.: "I am still having too good a time loafing to get back to a deadly dull routine of regular hours, incompetent assistants, and unimaginative superiors. Now when I want to make something there are no case authorizations to be approved, no draughtsmen to mess things up, no requisitions for which initials have to be begged. I make it or buy it, and when the job is finished it satisfies the entire organization. Several months ago I found that I didn't know how to differentiate  $\cos x$ , so I've begun a review of calculus for mental exercise with a real book. And the problems are stinkers such as we never had at the Institute."

From George Rhodes comes the following: "I have traveled a great deal in the last few years and have almost been commuting between New York and the Southwest. In all my travels, however, I rarely run into an '05 man. I once thought I was an electrical engineer, but I don't know what kind of an engineer I am at the present time, because I have mixed up in the design of the Lake Pontchartrain Bridge extending some five miles across Lake Pontchartrain near New Orleans, in the development of natural gas pipe lines in Louisiana and Colorado, as well as in the development of power systems. Men working under my direction have constructed a 100,000 k.w. power station near Monroe, La., using natural gas as a fuel, which is producing power today at a lower total cost than any other plant in America, not excluding Niagara Falls. I also had a rather uncomfortable job last year in connection with the development of a power system in the West Texas oil fields. This was not a big job, as jobs go nowadays, but it involved the

financing of a company, the design and construction of a 12,000 k.w. power station with 100 miles of high tension transmission line and three step-down substations and the entire time elapsed between the organization of the company and the initial delivery of power was from April 8 to July 18, a total of 102 days.

With feelings of deep regret, we report the passing of another member of the Class, Gorham Crosby. The following report comes from a member of his law firm of Ward and Crosby: "Gorham left Technology without graduating and entered the Patent Office as an assistant examiner and was there for about two years. While in the Patent Office, for two years he attended law school in the evenings, and within that period completed a three-year course of law and passed the Bar examination of the District of Columbia. He was admitted to the Bar of the Supreme Court of the District of Columbia on July 2, 1907, and later on to the Court of Appeals of the District of Columbia. On August 2, 1907, he took a position as an associate in the firm of Kenyon and Kenyon, patent lawyers of this city, and remained with them until December 31, 1916, when he went into practice for himself. In January, 1920, we organized the firm of Ward, Crosby and Smith, which was in existence until July, 1927, when Mr. Smith went abroad to reside and the firm became Ward and Crosby, as formerly. During this period he drew to him a substantial number of clients, and at the time of his death was enjoying a large and lucrative practice. As you know, he was a very quiet, unassuming fellow but a veritable human dynamo. He was what you might term a lone worker and seemed to enjoy getting off by himself to do his work, no doubt because of his desire for extreme efficiency in dispatching work. I know of no man in the profession who had the ability to dispatch high-grade work as rapidly as he could. While there may have been and probably are men in the profession of greater ability, it has always been a marvel to those who came in contact with him, how rapidly he could turn out work of a very high order. His ability was very far above the average and he had become recognized as being among the ablest lawyers of the Patent Bar. Unfortunately for him, he seemed to get more pleasure out of work than anything else, and literally killed himself at it.

"He had had serious heart trouble ever since he was a boy, and as he grew older it worried him more and more. Also in recent years he had been troubled with colitis. Notwithstanding these handicaps, he continued to work under extreme pressure wholly disregarding his physical condition. The pressure of work on him last winter was so great that he went off for an early vacation — in June, up to Cape Cod, but was only there for a few days when I heard that he had returned home to consult a heart specialist. He had a very serious attack and was confined to his house for about

three months. We tried to sever his connections with the office to give him a complete chance to recover, but he refused it and insisted on carrying on some work at home, and finally in about three months returned to the office on what he called half time. Only a few weeks after he returned to the office he insisted upon going down to Washington to argue a case, which he was urged not to do. He went down, and not only argued this case, but sat up for two nights writing a brief and attending to other business during the day, and came back with a serious relapse from which he did not recover. Even in this last sickness he would not remain in bed but insisted upon being up and around his room and sometimes downstairs, but this time I refused to let him know anything about what was going on in the office. I think the end was quite unexpected by him, since he had had sent up to him a couple of boxes of cigars only the day before he died. His idea seemed to be that he would go right along as if nothing was the matter with him and take chances with the consequences. He died on Monday, November 12, aged forty-six. Services were held at his house the next day, and with Mrs. Crosby and her brother, I took the body up to Cape Cod, where it was buried at his home. Gorham left a wife, May C. Crosby, and three children, one a boy of sixteen, another boy about twelve, and a daughter about eight. His home was at Glen Ridge, N. J.

"With regard to his professional work — while he had a great many clients and worked in nearly all phases of the arts, the great majority of his work was in chemical patent litigation and litigation involving the car lighting business. In this latter he represented the Gould Coupler Company and the Gould Storage Battery Company for a number of years until that business was bought up by the Symington Company who had their own patent attorneys and patent department. In the chemical business he had a number of clients and made quite a reputation for himself as a patent lawyer who was particularly expert in chemical matters. He was a member of the Chemists' Club and had quite a following up there. He was also a member of the Lawyers Club, the Association of the Bar of the City of New York, the New York County Lawyers' Association, the New York Patent Law Association, the American Patent Law Association, a member of the Bar of the Supreme Court of the United States, where he had occasion to practice from time to time in the course of his work. He was also a member of the Glen Ridge Country Club." — ROSWELL DAVIS, Secretary, Wes Station, Middletown, Conn. SIDNEY T. STRICKLAND, Assistant Secretary, 20 Newbury Street, Boston, Mass.

'07 News regarding '07 men is scarcer than it has been for years. I have items of interest regarding only three members of our Class. Some of you have been good enough in the past to write complimentary letters on the material in our Class Notes



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It is pleasing to receive such letters, and we would like some more, but we can't expect them on the basis of meager notes. So if you who have had some business or professional development or promotion or some interesting family experience will write to your Secretary, it will put us in a fair way of receiving more compliments.

Sam Coupal wrote under the date of December 8 from his gold mine in Octave, Ariz., that he had the mill running twenty-four hours a day and was getting a ninety-five per cent recovery of the values — milling fifty tons a day. — The social column of the Boston *Evening Transcript* of December 17 announced a dinner to be given that night in Boston in honor of Miss Susan Moller of the debutante set, daughter of Mr. and Mrs. Kenneth Moller of Wilmington, Del.

Our versatile classmate, Carl J. Trauerman, mining engineer of Butte, Mont., President of Montana Stock and Bond Company, Editor of Montana Natural Resource Bulletin, President of Butte Radio Club, and so on, is referred to in the following article in the *Montana Standard*: "Suggestions that broadcasting stations announce their call letters after each number on the program, in order to help radio fans to relog their sets in accordance with the new allocations of wave lengths were contained in a telegram sent to the Federal Radio Commission by Carl J. Trauerman, President of the Butte Radio Club yesterday. Trauerman praised the new allocation saying that adjustments will straighten out in a few days the present interference, and then reception will be much clearer than before.

"The telegram reads as follows: 'While there is quite a little interference with the new allocations, I think that in a few days, with adjustments, this can be straightened out and reception will be much better than before, especially from high-powered stations. As we are now getting a great many stations never received before and as all fans desire to relog their sets quickly, I suggest that through the press you inform all stations to announce their call letters after each selection on their program, instead of waiting for three or four selections before announcing, this also to apply to stations on networks. I suggest also that eastern stations announce their call letters slower. If this be done for three or four days, fans will in that time be able to relog their sets to their satisfaction. I make this suggestion as President of the Butte Radio Club, one of the largest and most active organizations in the country.' " — BRYANT NICHOLS, Secretary, 2 Rowe Street, Auburndale, Mass. HAROLD S. WILSON, Assistant Secretary, Int. Shoe Company, Manchester, N. H.

**'09** E. G. Luening is located at Louisville, Ky., being the Vice-President of the Kentucky Oxygen-Hydrogen Company engaged in the manufacture of oxygen, hydrogen, and acetylene gases and the sale of oxy-acetylene cutting and welding

equipment. He is also Vice-President of several subsidiaries of this company which are engaged in the manufacture of helium gas in the world's only helium plant, in the construction and operation of gasoline stabilizers, and in the production of fuel gas — particularly for the operation of engines in aircraft and in plants engaged in the production of special processing equipment, such as ice cream freezers, continuous compounders, and machines carrying out that type of process.

Horace Clark announces the arrival on October 3 of a daughter, Joan Elizabeth. — Joseph H. White, engineer of the Department of Public Works of Allegheny County, is the joint author with Mr. W. M. Von Bernewitz, mining and metallurgist engineer of the Bureau of Mines at Pittsburgh, of a very interesting and beautifully illustrated book on "The Bridges of Pittsburgh." This is just off the press of the Cramer Printing and Publishing Company, Crafon Branch, Pittsburgh, Penna. — CHARLES R. MAIN, Secretary, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, Assistant Secretary, Postum Company, 250 Park Avenue, New York, N. Y.

**'11** These notes are being penned a week before Christmas, and just this week the genial sales manager of the Lamson Company has assigned yours truly to the New England district. This, of course, means that my industrial sales activities will center at the company's Boston office at 213 Congress Street, and, of course, the Denison family will continue to live in the old homestead at 32 Reed Street, Lexington. There's a welcome on the mat both at the home and at the office.

Who do you suppose has slipped from single blessedness into the state of matrimony? No, you are wrong, it's not Pete White, it's Erving Young, I. You'll all enjoy reading the announcement. "Mrs. Ida Meyer announces the marriage of her daughter, Elma Francis to Erving M. Young on Friday, December 7, at Newark, N. J." The Youngs will be at home after January 15 at 748 Devon Street, Arlington, N. J., and, of course, the best wishes of all of us go to the happy couple.

You know every class has a class baby, and 1911's was born in 1912. She is Phyllis Hilda Glazier, daughter of Gordon Glazier, VII, and Mrs. Glazier. She graduated last June from the Choate School, a girls preparatory school in Brookline, and this year she is a freshman at Mt. Holyoke College. She is most attractive and quite athletic, excelling in swimming and riding. According to Gordon "she has more sense than her old man or most of her uncles if recollection serves me correctly." Gordon is in business for himself at 560 Atlantic Avenue, Boston, and is justly proud to be the father of our fine Class Baby.

When this year's pamphlet entitled "Officers and Committees of the Alumni Association of M. I. T." appeared recently, it was brought home to me more

clearly than ever before how active 1911 men are in the world-wide interests of the alumni organization. The writer is the Class Representative on the Alumni Council, and there are four other classmates who are members. Jack Herlihy, Assistant Secretary, is the local representative for the Technology Club of Detroit; C. R. Johnson, X, is representative for the Akron group; Dick Ranger, VIII, for New York; and Gordon Wilkes for Bridgeport. Dick Ranger is really a three letter man this year, for in addition to being a member of the Council, he is President of the Technology Club of New York and a Vice-President of the Technology Clubs Associated. In addition to Dick there are seven other 1911 men who are this year presidents of the local alumni groups in their home cities. They are: Ed Kruckemeyer, IV, at Cincinnati; Hall Sargent, II, at Harrisburg; George Forristall, II, at Houston; Don Southgate, IV, at Nashville; Herb Angell, IV, at Portland, Ore.; and O. H. Shenstone, I, at Toronto. Then in Tokio, where they have the active Technology Association of Japan, Ewazo Suzuki, X, is Vice-President and Kanezo Goto, II, is on the Board of Directors.

At the annual meeting of the Massachusetts Coaches Association in Boston in mid-December Charlie Linehan, I, was reelected Secretary. "It was by far the most enthusiastic affair ever held," said the Boston *Globe*, "and Secretary Charles Linehan, Harvard's football scout and coach for Browne and Nichols, was given plenty of commendation for the success of the meeting." — Bill Foster, IV, announces that his architectural firm, Foster and Vassar, are now in new offices at 25 West 45th Street, New York City.

Bancroft Hill, I, valuation engineer of the United Railways and Electric Company, Baltimore, Md., is one of the leaders in the movement for the establishment of one of the finest airports in the world. The Baltimore airport contemplates a deep water bulkhead of about 10,000 feet with some twenty million yards of fill. After having been Chairman of the Site Committee of the Baltimore Airport Commission, Ban has recently been chairman of a committee of the Engineers Club of Baltimore.

I had a nice note from Warren Simonds, I, recently in which he said that things were progressing for his company and for himself. He is with the Rodney Hunt Machine Company at Orange, Mass. — I had lunch with Hal Hallett, III, the other day in Boston, and he likewise reports business fine with his plastering company, Cathcart, Hallett and Goodwin, Inc. Hal is Treasurer. — Now that Ye Sec is once more in the Hub there ought to be more letters coming in from classmates, and you, friend reader, are invited right now to write one. Remember, if you want something conveyed — or you have something to convey — write to Dennie. — ORVILLE B. DENISON, Secretary, The Lamson Company, Inc., 213 Congress Street, Boston, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford, Mass.

'12 Bates Torrey, X, got away from Syracuse long enough to pay us a brief visit recently. We have been soliciting Bates by mail for the past six months for a letter describing his activities and history. He has now promised us that this letter will soon be forthcoming.

From sunny California comes a letter from Lester G. Metcalf, II: "I must admit that I have been a total loss as a correspondent regarding my activities and my contact with other members of the Class of 1912, but I will do what I can to give you a brief outline of my activities and present location. After graduating I (with Zeke Williams, Mowry, and Smith) started work for Swift and Company at Chicago. We were together only two or three weeks after which we were scattered out over the Mississippi Valley, it falling to my lot to be sent to South St. Paul, Minn. I only stayed at this point about nine months, due to the necessity for my return to my home in California.

"After bumming around for some time in California, I worked successively for the Baker Iron Works in Los Angeles, the Union Oil Company at San Luis Chispo, the Shell Oil Company at Coalinga, the Cananea Copper Company of Sonora, Mexico, and the Anaconda Copper Company in Plumas County, Calif. I then returned to the Union Oil Company as refinery engineer of their refinery at Oleum, which is located directly across the Carquinez Strait from the Mare Island Navy Yard. After staying there for three months I left to enter the military service and was batted around from pillar to post in the Engineers until February 1, 1919, my last service being as Captain of D company of the 212th Engineers, 12th Division, located at Camp Devens.

"Leaving the Army I returned to the Oleum Refinery as refinery engineer and served in that capacity for twelve months. I was then made superintendent of this plant in the early part of 1920. I served as superintendent of this plant until July 1926, at which time I was transferred to the head office at Los Angeles and made assistant manager of refineries with general supervision of the manufacturing operations and construction work for the entire manufacturing department of the company.

"Unfortunately, I have not had much contact with other members of the Class of 1912, although I have in the office two men from M. I. T., and there are a number in other departments throughout the company. I have been married for about ten years, have two children (one of each) and am pretty well settled down in Southern California, at least for the present."

C. V. Reynolds, XI, has been prevailed upon, in spite of his natural modesty, to give us the following information about himself: "A few days before graduation I went to work for the Boston Transit Commission as inspector on the Boylston Street subway. While on this work I attended a lecture course

at the Institute in Contracts and Specifications, an evening course at the Franklin Institute in Gas Engines, and an evening lecture course in accounting at the Pace and Pace Institute of Accounting.

"After two years with the Commission, both in the field and in the office, I obtained a leave of absence to manage, during the absence of my brother in California, a merchandising and transportation business in Canton, an interest in which I had previously acquired from my father. Later in 1914 I set up an engineering office and shortly afterward purchased the engineering and surveying business of Frederick Endicott of Canton. I incorporated and operated under the firm name of Canton Engineering Company, Inc. Construction opportunities presented themselves and I went into the contracting business. This interested me more than the engineering work and I subsequently sold the latter.

"In 1917 we furnished considerable equipment, horses, wagons, trucks, and so on, to the Fred T. Ley Company and the Barrett Company at Camp Devens, and also to the Aberthaw Company at the Destroyer Plant at Quincy and Hog Island. Early in 1918 I went with the Naval Aircraft Factory at Philadelphia, a division of the United States Navy Department. I was subsequently assigned to Bristol, R. I., as branch manager of the construction of flying boat hulls at the Herreshoff Manufacturing Company. On account of this connection we sold at public auction, in March of that year, practically all our equipment of horses, wagons, and so on. In 1919, I with my brothers, started the contracting business again. In 1922, with the permission of the Commissioner of Corporations, we changed our firm name to Reynolds Brothers, Inc., with office at 179 Summer Street, Boston. The scope of our work includes various state and municipal highways, bridges, sewers, and drains, a few industrial buildings, one tunnel, subdivision of real estate and golf course and landscape construction. We also own and operate the Baym and Reynolds Company of Canton, grain and contractors supplies dealers, the Deane Coal Company, Inc., of Canton, the Sawtelle Coal Company, Inc., of Boston and Dedham, and a dairy farm in Sharon, on which we have about eighty head of cattle.

"I am a member of the Engineers Club of Boston, the Boston Chamber of Commerce, the Blue Hill Country Club, the Wampatuck Country Club, a Director of the Canton Trust Company, and the New England Road Builders Association, of which organization I was President in 1925 and 1926. I was married in 1924 to Eileen E. Kennally of Dorchester. We have two children, William and Mary. Thank you for your contribution, Charlie.

Our readers will please notice that our monthly effort is becoming more and more curtailed. Please help us out by writing to Mac or Shep. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, 411 Maitland Avenue, West Englewood, N. J.

'14 If the meeting of the Reunion Committee at the Fraternities Club in New York on December 7 is any criterion of what the Reunion is going to be, the Reunion will be a wow! As noted in the last issue of *The Review*, our President, Buck Dorrance, is arranging this Reunion. His first step was to appoint two committees, publicity and arrangements. On the former are Charlie Fox, Tom Duffield, Bull Owen, Charlie Fiske, George Perley, Sousa Brooks, Boggs Morrison, Skip Dawson, and Norman MacLeod; while Art Peaslee, Peb Stone, Porter Adams, Buck, and your Secretary constitute the latter.

The dinner on December 7 was a joint meeting of the two committees. Charlie Fiske assisted as a special agent on arrangements for the evening and — oh well, just sign up now for the big event in June! Yes, Charlie rehearsed "Head Clear As a Bell" and tried out several new ones, that even threaten to surpass the original. Buck even departed from his usual reticence long enough to boast of being the proud father of a second son, David Ross Dorrance, born in February, 1928, whereupon Art Peaslee insisted that your Secretary had done him an injustice by omitting his family history from these columns. Your Secretary apologizes and publicly announces the happy family of one boy and two girls at the home of Art Peaslee in Hartford, Conn.

The *Fourteen Pointer* was authorized to appear again as Volume II. The first edition will be on the newsstands just as soon as the arrangements committee is able to make a definite agreement with a club for the Reunion. Let it be recorded here that nine members of the committees were present and voting at this first meeting.

The Boston group held their regular monthly luncheon at the Engineers Club on December 4. Horton gave an excellent summary of the status of television as applied to both wire and radio transmission. After the talk, a delegation from the Boston section of N. E. L. A. met him and asked him to repeat the talk that same day before their luncheon also being held at the Engineers Club. Our luncheon lacked one important regular attendant — Dean Fales, who was confined to his home with the grippe. Those attending the luncheon were Gazarian, Louis Charm, Crocker, Frank Ahern, H. S. Wilkins, C. H. Wilkins, Atwood, Horton, Boggs Morrison, and your Secretary.

Picking up the morning paper recently, your Secretary was greeted with a sizable picture of Dinney Chatfield. Chat, it seems, has published a new book entitled, "The Airplane and its Engine." Chat certainly has a good publicity agent who apparently aims to sell the book to the English-speaking world at large, as well as to the poor unsuspecting students at Technology. On top of all this, the papers carried a feature announcement a few days later that on Sunday, February 10, Associate Professor of Aeronautical Engineering Charles Hugh Chatfield,



1914 Continued

S.M., would give a public lecture under the auspices of the Society of Arts on the subject of "Why an Airplane Flies." Fellows, you have just got to come to that reunion next June to see what fifteen years have done to some of our classmates. — H. B. RICHMOND, *Secretary*, 100 Gray Street, Arlington, Mass. G. K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, N. Y.

**'15** "Tis the week before Christmas, but all's not going well." I wish I could transpose the rest of the lines in that old ditty to tell you what a thin month this is. Nobody has written in anything, so please lean on your pens for me next month. The best news we have is the very interesting and pleasant visit I had with Lucius Bigelow at his office in the Metcalf Laboratories at Brown University. Last month Lucius told us about himself. I was glad to see him. He looks great and has changed considerably. Lucius's forte is teaching to which he devotes most of his time, doing only a little research work. He has charge of one of the organic chemistry courses at Brown University. He dwelt at length on the pleasure he has had in his personal contacts with the students in their lives outside the classroom. It is an interesting study of human nature and he has been able to help a number of his students in other ways than in their studies. It seems to me more college professors and instructors could do this to promote a better and more human relationship between themselves and their students. Lucius has the right idea in the way he has gone about it, and I think any of you who get to Providence would enjoy a visit with him and hearing some of his interesting experiences.

The plans for our second New York dinner on January 7 are going ahead under the kind and able direction of Jim Tobey. We shall have a good report on this for next month. — Frank and Mrs. Scully are sailing early in January for a three-month world cruise. We all join in wishing them a happy and interesting trip. — Easty Weaver has completed his work on Technicolor pictures and is now doing research on an industrial refrigerator using gas. He saw Art Ball out on the coast. — The usual Boston bunch is around town. Mitch Kaufman is very busy on his extensive interests and soon we shall have some more news of his activities. I hope you all had a happy Christmas and have opened up a successful and prosperous 1929. — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

**'16** By this time I assume that only the most optimistic members of 1916 still look in the Class Notes section of The Review. Such comments as have reached the ears of your one-time Assistant Secretary tested at least slightly alkaline. Be that as it may, what little news has filtered in is here offered. — P. C. Baker, II, is the proud father of Thelma Lorraine,

born in Detroit on December 14. At this writing he has not been allowed to hold the child, and is deploring the extreme development of science and hygiene. The congratulations of the Class are extended to Mrs. Baker and Phil.

G. Gfroerer, II, who has been upholding the dependability, long life, and so on of Dodge Brothers motor cars, weathered the Chrysler merger and is now in charge of the Indiana district, with his office in Indianapolis. I enjoyed a breakfast with him election day at Indianapolis and listened at some length to his remarks about a one-time engineer, like myself, who would vote for Al Smith. And that reminds me, in the list of Christmas books for children, sent out by the Book-of-the-Month Club, there is one entitled, "What Engineers Do," by Walter Binger. I have meant to borrow the book (author please note) to see if any mention is made of the large 1916 delegation who, in one way or another, contribute to the manufacture and sale of cloth bags: Santa Claussen, Tom Little, Dick Hanneman, John Phillips, and myself; or of those individuals like Bill Farthing who term themselves real estate engineers. Bill holds forth in New York, constructing and selling those twenty-six-room and ten-bath apartment houses. At any rate we can be proud to add Walter Binger to our list of 1916 authors.

Milton Pettibone, Fred Hine, and Howard Foster are still in Detroit. Milt has just moved into a new and very attractive house in Grosse Pointe, Detroit's most exclusive suburb. And that's as far as I can spread out the news. About a year ago I asked Bill Farthing to accept my resignation as Assistant Secretary, and had no luck. The almost total lack of results in the form of Class Notes in the interval may have changed Bill's mind, and this effort is perhaps in the nature of a swan song. In any event you can make it a lot easier for whoever is responsible for this space if you will send in some news. — RUSSELL H. WHITE, *Secretary*, Rand-Kardex Service Corporation, 118 Federal Street, Boston, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

[Last minute advices enable The Review Editors to announce with pleasure that Henry B. Shepard, 269 Highland Street, West Newton, Mass., has accepted the Secretaryship of the Class of 1916.]

**'17** In keeping with the charitable spirit of the holiday season in which this set of notes is being written, the Class of 1917 has decided to open a guest corner or possibly an orphan asylum for the 1916 news items that seem to be without a home. This step has long been contemplated, but in the absence of any official authorization was not adopted. The many requests of recent months have been climaxed by an appeal from Bill Farthing, Past President of 1916.

William G. Brown '16, of the Department of Aeronautical Engineering at the Institute, suffered a fractured skull in an

automobile accident on the Newburyport turnpike this summer, but is reported to be enjoying a phenomenal recovery. Eric Schabacker '16, formerly of Shawanigan Falls and way stations, now President of the Erie Enamel Company, has added to his prosperity by making colored enamel frying pans and other kitchen utensils. Russell H. White '16, Secretary of his Class, is occasionally seen in the vicinity of Boston having installed Rand-Kardex systems in many institutions including the Institute of Technology. Hen Shepard is another '16 man seen around Boston and the University Club, while Hovey Freeman '16 is as usual holding forth in Providence. S. M. Spaulding '16 is one of the leading Pacific Coast architects. After finishing a palace for Harold Lloyd he is now engaged on a movie theatre for Wrigley on Catalina Island. Another prominent '16 architect is W. W. Drummey of Boston. Jim Burbank '16 is one of the governors of the New York Technology Club.

The Hunt Tile Company of Salem, managed by Phil Hunt, is reported as profiting from its hollow tile business and is considering branching into the artificial limb industry, specializing in hollow legs. — One Montgomery Lovejoy is practicing a new song to be given on request at the next reunion. The title has not been given but the refrain is "Take Me Back to the Party." Ask him for it if you see him. — Kenneth E. Bell made a special call to complain that the birth of Vera Phyllis Bell on July 2, 1928, had not been officially reported. Ken had seen John Holton's new house at Norriston, Penna., and could remember nothing about it except the price that Johnnie probably had to pay. We gathered that association with the York Heating and Ventilating Company was pleasant and remunerative. — Walter F. Pond who was at the Institute for a few months after his discharge from the army has gradually stepped up in the Geological Service of Tennessee, following a brief stay with the State of Missouri. He was assistant state geologist until June, 1927, and since then has been state geologist of Tennessee. He reports that he saw Lowell Cady in Kingsport on a municipal water supply job last year.

Captain Frank Conaty writes approximately as follows from Schofield Barracks, Hawaii, where he is with the 8th Field Artillery. We say "approximately" because a few flattering comments on Lobdell must be omitted as possible causes for controversy. "There seem to be no other '17 men over here. Charlie Atkinson left last spring, but I missed him both times I tried to get in touch with him. He had Battery D, 55th Coast Artillery at Fort Ruger. There are, however, about fifty Technology men in the territory — about twenty of them in the army, navy, or coast and geodetic surveys. Some of them are graduates of the army ordnance or air service courses. General Hamilton and Colonel Phisterer, who were P.M.S. and T., are both here; General Hamilton is in command of our brigade. Mack

1917 Continued

Angas was here as naval constructor at Pearl Harbor until about two years ago. Kennett of the Class of 1924, who also finished the army course of Technology last June, has just arrived and has been assigned to the same battalion as I, so I have received all the recent dope from him.

"Have you heard that Frank Hastie resigned from the Engineer Corps about two months ago? I haven't seen it in *The Review*. He lost a little girl, five or six years old, from diphtheria last spring. I haven't run into him for about seven years when we were at Camp Grant, Ill., together. The Technology Club in Honolulu had a dinner in honor of Dr. Jaggar's return from Alaska a month ago. About twenty turned out, all but two being civilians living in or near Honolulu. St. Duell, who finished the army motor course at Technology in June, 1927, and I represented the army. By the way, I have had several trips in Heggie's Fokker and it certainly is a beautiful boat. Tell him so if he comes around. They are taking fine care of it."

The Air Corps *News Letter* said: "Ed Aldrin has severed his official connection with the Army Air Corps to accept a position as Aviation Manager of the Standard Oil Company of New Jersey, with office in New York City. Captain Aldrin's reputation in the Air Corps is of a very high character. He was considered one of the most valuable all around officers. An excellent representative of the best type of army officer, his pleasing personality won him many friends, all of whom regret his departure from the Air Corps but wish him every success in his new line of work. Most of Captain Aldrin's service in the Air Corps was with the Engineering Division at McCook Field and with the Materiel Division at Wright Field, Dayton, Ohio. He came to Dayton in 1919 and was assigned to duty as Assistant Chief of the Airplane Branch at McCook Field. Later he organized and opened the Air Corps Engineering School. He served as secretary of this school as well as instructor, and greatly improved the course, handling all details in a highly creditable manner." — RAYMOND STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

'18 Within the past month or six weeks there have been two gatherings, one in New York and one in Boston, of those who attended the Reunion last June. In both groups there were a few who were not at the Reunion but before the evenings were over they wished they had been. The affair in New York was a stag party, and I understand there were sixteen of the Class there. In Boston the party took the form of a dinner party at the Engineers Club on Friday, December 14. There was a group of twenty-nine, seventeen of the Class and twelve of their wives. After a good dinner the movie taken last June was shown, and many were the laughs that we had, at ourselves and at each

other. The movies, as you probably all know, were taken by Ed Rogal, and he was kind enough to bring his projector to the club and act as cameraman for us. He has made the offer of taking pictures, movies I mean, of any of the children of the Class for the fond parents and then these also could be used as records of the Class in the years to come.

Congratulations are in order to Mr. and Mrs. Asher Joslin of Brookline on the arrival of a young son, David Asher, on October 30, 1928. As far as we know this is the youngest addition to the list of babies in the Class.

Mal Eales promised to have copy over from New York for this copy of *The Review*, and he told me that he would probably have at least a half column for me. As this is the last day for sending in news for this edition and as I haven't heard from Mal, here's hoping that for the next issue I will have some New York news.

John Blossom Woodward is no longer with the Worthington Pump people, but is now doing architectural engineering. No name of a firm was mentioned. You may remember his wife is also a member of our Class, or was most of the time. She was Boudy Lemp. They are working hard at remodeling a house they purchased some time ago in Ridgewood, N. J. Boudy was an architect you know, so she is doing much of the work about the house. I know some of you might be interested to see what they are doing to the Dutch stone house they bought. They are located on Paramus Road, Ridgewood.

Any of the Class that are in Boston on the third Monday of each month will be welcomed at the Engineers Club for luncheon at 12:30. This custom is being restored, so be sure to come and see us. There will be some one there that you know, you can rest assured of that. — GRETCHEN A. PALMER, *Secretary*, 148 State Street, Boston, Mass.

'20 Ho hum! Buck Clark is safely married and Jim Gibson announces the arrival of James, Jr. I mind the time when these two were the class's staunchest bachelors. Truly we are getting on. Buck and his bride will live in Hartford and not in Springfield as announced in last month's *Review*. Jim already has a bouncing and beautiful little daughter, so this event makes a family worthy of our heartiest congratulations.

To good old Hank Pierce I am indebted for most of this month's supply of notes. Hank is still in the bond department of the Engineers National Bank and was good enough to drop in and give me the lowdown on a few of the boys. Hank says that H. P. Duffill is now Treasurer of the Back Bay Cooperative Bank and is largely responsible for said bank's exceedingly flourishing condition. F. W. Sears is on the board of directors of this same bank and likewise W. A. Fleming, who is also in the printing business. F. C. Spooner is running his own

business — a retail dry goods establishment out in Newton — under the name of the Spooner System. Bob Fairbanks is running a radio shop in Newton also. Mills and Luce are with the State Highway Commission atop Beacon Hill, and John Buckley is also at the State House as inspector of bridges. Badger is an inspector with the Factory Mutual Insurance Company.

Did I tell you that Dolly Gray is located in New Orleans? His address is 4414 Elba Street. Bob Tirrell is back in these parts after being in Syracuse for a time. He is now living in Wollaston.

From *The Review* Editors comes the notification taken from the Boston *Evening Transcript* for December 22: "Announcement is made of the marriage today of John Nolen, Jr., and Eleanor Dyche Weakley at St. Mary's Episcopal Church in Ardmore, Penna. Mr. Nolen, was born in Ardmore and is the son of Barbara Schatte Nolen and John Nolen, city planner of Cambridge. He first attended Harvard University, but is a graduate of the M. I. T., Class of 1920, and a member of the Delta Upsilon fraternity. The bride is the daughter of Mrs. Maude Jennings Weakley of Cleveland, Ohio, and is a graduate of the School of Library Science, Western Reserve University. Mr. and Mrs. Nolen will reside in Philadelphia where Mr. Nolen is assistant engineer for the Philadelphia Regional Planning Federation of the Tri-State District. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

'21 News of 1921 happenings has been at such a low ebb that your Asec has been forced to make use of other than the usual methods of obtaining material. Threats have had little effect, false reports ditto, appeals are disregarded, so that as a final expedient we have tried to make our own news. Even then there was a joker in it, for a moderate amount of material has drifted in, relegating our little home-made story to the end. But as we make a hurried exit to avoid the missiles, may we remind you, in this month of Emancipation and Truth, that our ascretarial slavery will be greatly lightened by the receipt of a story, and no questions will be asked concerning its truth.

Comes Winter Dean, XV, and offers his compliments and begs to be allowed to sing the following in his plaintive tenor: "I have read the third paragraph of the last column of page 511 of the July *Review*. What I want to know is how much did Art Skilling get paid by our sister city across the river for moving my residence ten miles to the less desirable of the Twin Cities? Possibly I am doing Art an injustice and it was you or Cac that collected the cash and if so I think I ought to get at least a fifty per cent split. We have a great deal of trouble in St. Paul keeping the western bank of the Mississippi from claiming our famous men and great industries. I saw Reg Smithwick for an afternoon when he was in this part of the country for the medical



convention in June, but haven't seen any other '21 men for a long while." No, Wint, neither Ray nor your Asec got a look in on that deal; but then it's too much to expect anybody to come clean from Pittsburgh.

S. E. Lunden, IV, sends a very distinctive announcement of his opening of an office for the practice of architecture in the Rowan Building, Fifth and Spring Streets, Los Angeles. Sam has formerly been identified with Cram and Ferguson of Boston, Schultze and Weaver, Reginald D. Johnson, and Gordon B. Kaufmann, all of Los Angeles. News also reaches us that M. F. Farren, IV, has formed an architectural firm with a graduate of Columbia, to be known as Kenneth W. Dalzell and Merritt F. Farren, Architects, Short Hills, N. J.

R. W. Haskel, II, sets a good example for the rest of the Class by bringing his history up to date with the following: "You know I didn't finally finish until 1922. The S. A. T. C. was too great a temptation. I am now constantly getting dope from both classes but I have affiliated with the Class of '21 as I know more of the fellows in this Class. During the fall term of 1922 I was assistant instructor in the Steam and Hydraulics Laboratory under Professor Eames. After that I went with the Allis-Chalmers Manufacturing Company at Milwaukee where I went through their two-year student course. They were building an 80,000 h. p. hydro job on the Catawa River near Charlotte, N. C. I motored by Ford from Milwaukee to New Orleans in just two weeks, leaving in a howling snow storm and finding violets in bloom in New Orleans. I saw Ray Burrus, II, in St. Louis. I was in Barre, Vt., during the Vermont flood and saw aplenty. I worked as a mechanic on the construction job some seven months. J. B. Starkweather, I, was floating around trying to keep a transit up straight.

"I next landed in New York where I worked at managing real estate for relatives and lived on Broadway and rated an apartment in a high class hotel. It was O.K., but I didn't like the life. Finally, I started with the Sullivan Machinery Company of Claremont, N. H., as a salesman. I spent three months at the factory at Claremont for training and was then transferred to the Boston office. I have been given more territory until I now handle Maine, New Hampshire, and Vermont. My headquarters are in Concord, N. H., at 3 Cambridge Street, Box 457, and I would be glad to have any of the boys who are up in these parts drop me a line. I see W. K. Ramsey, II, and C. W. Bryden '22 occasionally. Ramsey has been with the United States Envelope Company of Worcester since graduating — quite a record as most of the fellows hop around. Bryden is with the DeLaval Separator Company, and lives in East Orange, N. J.

"I just had occasion to look up several of the fellows in connection with the drive for dormitory funds and am surprised to find that half of them are not in engineering lines at all. Two out of ten

never graduated. Four have A-1 jobs. Sixty per cent are married. Nearly all have held several jobs since graduating. By the way, I'm still single, but where there's life there's hope."

Announcement has been made of the engagement of J. J. Healy, Jr., X, and Miss Mary Angela Croker of Newton, Mass. No date has been set for the wedding. There are a number of marriages to report. G. T. Welch, XV, and Miss Eleanor Allen of Central Falls, R. I., were married early last year. They are living at 39 Clinton Street, Cambridge. Mr. and Mrs. Welden R. Grant of Brewer, Maine, have announced the marriage of their daughter, Ruth Frances, to Donald Stover Piston, VIII. Announcement is made of the marriage of Miss Hilda Apthorp Heath of Brookline and George Sisson Safford, X, of Potsdam N. Y. Mr. and Mrs. Safford will reside in Brookline. Miss Augusta Meade Roberts, daughter of the Reverend and Mrs. W. Dewees Roberts of East Boston, and John MacDuffie Sherman, X, son of Mr. and Mrs. Charles W. Sherman of Belmont, were married October 7 in St. John's Episcopal Church, Boston. A real Technology wedding it was with O. F. Neitzke, X, George Thomson, X, and K. B. White '20 for ushers. Mr. and Mrs. Sherman are living at 501 Broadway, Chicopee Falls, Mass. Mr. and Mrs. Homer Beeson Talley announce the marriage of their daughter, Mary Alice, to William John Edmonds, X, on October 9. Mr. and Mrs. Edmonds live at 730 South Sixth Street, Terre Haute, Ind.

In a recent lecture before a meeting of the Buffalo section of the American Chemical Society, Dr. C. H. Herty, Jr., X-A, stated that steel concerns throughout the United States are now building up a new school of physical chemistry with the employment of chemical engineers to improve quality and to obtain a more economic production of steel. Dr. Herty, who is with the U. S. Bureau of Mines at Pittsburgh, said that his laboratory is expending nearly \$500,000 a year in research work, of which amount twenty-nine steel companies are contributing \$15,000 a year each. Work is under way on such problems as the de-oxidation of steel, the toughening effect of manganese, and the elimination of minute traces of sulphur.

Ernest R. Gordon, XII, is now working at the American Smelting and Refining Company at 1112 Mills Building, El Paso, Texas. We would be glad to get some news from Ernest, about what has been happening to him.

And in conclusion: Mr. and Mrs. Sigmund Mayer announce the marriage of their daughter, Maxine Maass, to Carole A. Clarke, VI, on December 17, at Baltimore, Md. We are living at 17 South Colonial Avenue, Moorestown, N. J., where a hearty welcome awaits all '21 men who can't make the standing lunch invitation in Camden. — RAYMOND A. ST. LAURENT, *Secretary*, 225 Cleveland Avenue, Whiting, Ind. CAROLE A. CLARKE, *Assistant Secretary*, Victor Talking Machine Company, Camden, N. J.

'23 Here it is February and the Class of '23 is just putting in its appearance in the Class Notes column. Terrible! But what is worse still, the Gensec who is responsible for all this has not received a single bawling out or even a note of inquiry regarding the neglect of so important an assignment as reporting our Reunion last June. Can it be that the Class Notes are not read, and consequently haven't been missed, or is it that no one has yet given up hope that the news will be forthcoming, in each next issue?

First, regarding the Reunion. The eighty members of the Class who found their way to Plymouth, one and all agreed that the three days stolen from the routine of business were well spent. It is hoped that before long a complete story of the affair will be sent out to the Class, consequently we are withholding details until then. If any of you have any good pictures taken at Plymouth we would appreciate it if you would send them along, so that we can use them in this paper. From those who congregated at Plymouth, considerable information was gleaned. Bobbie Burns, we discovered, is now Thomas Edison's right-hand man. He tells Mr. Edison what to invent and how to do it. Of course Bobbie didn't tell us all this, but it did come from an authentic source. Pete Penny-packer and Bobbie Burns drove to the Reunion from Philadelphia. Pete made a poem, "To 1923," which was read at the Reunion. I would like to print the poem, but The Review says "No," so you will have to wait a little longer till we get out the *Reunion News*.

Lyman Tremaine, Charlie Mapes, R. W. Fox, Johnnie Sands, and Ed Barnes came down from New York. Shorty Chamberlain and Jack Cochran brought their families along, and even the youngsters had a good time. Bert McKitterick, High Chase, and Jim Robbins were there. By the way, Jim was married on November 3 to Miss Virginia L. Peters of Lenox, Mass. And speaking of marriages, Leo Poor, too, has jumped out. He beat Jim by a few days and on October 20 married Miss Mary M. Stoops of York, Penna. Leo is still with the railroad gang and is stationed at Baltimore. Bill Searles is another of our classmates who has plunged into the sea of matrimony. In September he married Miss Natalie Harrower of Big Creek, Tenn. But before we get too far away from the Reunion, we should mention the class banquet. Dennie was our guest and told us of his resignation as Alumni Secretary. Zimmermann almost broke up the party with his stories, and brought the dinner to a grand climax with his recital of Paul Revere's ride. The games brought out practically 100 per cent of the crowd. Don Height ran away with the golf prize while Chamberlain, as captain of the winning married men's baseball team, took home the prize for this event. The baseball game attracted lots of attention. The married men ran up a ten to one lead in the first inning and the final score was 19 to 17. The meeting broke up Sunday.

1923 Continued

During the summer and fall a number of news items have come in. Johnny Flaherty has been heard from fairly recently. He has temporarily ceased from his wanderings through the various mining districts of North America, and is now located with the stockbrokerage firm of John S. McDermott and Company on Wall Street. — The engagement of John Gunther to Miss E. W. Clark of Cambridge has been announced. — A. F. Flourney was married recently to Miss Margaret Thurston of Cambridge. — A week before our Reunion took place Gladys Farmer became the bride of Laurence E. Noble of St. Louis. — Another one of our classmates, Mal Carey, was married last summer to Miss Mary E. Bayley at Sherbrooke, Quebec. — Here's an item that doesn't mention a thing about a wedding. John W. W. Sullivan has left the Tidewater Oil Company to go with the A. O. Smith Corporation of Milwaukee, Wis. Johnny's work here will be in the physical testing laboratory and will consist of research on steel generally, particularly on the design of shapes. This company makes a large percentage of the automobile frames used in this country, a lot of welded pipe, and a fair amount of high pressure vessels, particularly for the oil industry. — Last June a small card arrived announcing the arrival of a daughter to Stan and Mrs. Hartshorn. Stan is living in Haverford, Penna., but we don't know what he is doing. — Then there is another wedding announcement, that of Edward Fox last June to Miss Elizabeth Silberstein of Brookline, Mass.

Well, boys, this is all that is on the docket at present, so send along anything you may have and we will blossom forth again next month. — ROBERT E. HENDRIE, *Secretary*, 12 Newton Street, Cambridge, Mass. H. L. BOND, *Assistant Secretary*, 37 Concord Avenue, Cambridge, Mass.

'24 Reunion! You had better plan to be there. It certainly looks as if pretty nearly every one else in the Class will be there. Our first notice went out about December 11, and in the ten days following we received registration fees from thirty-eight members of the Class. Such a number coming in so soon after our letter and so far from the Reunion convinces us that there is still the same old spirit in the Class that made it such a wonder during undergraduate days. We are sure there is going to be a big turnout, and your committee is proceeding, therefore, with plenty of pep born of the first returns. "If I'm within a thousand miles of Boston, I'll be there," is the manner in which R. S. Wertheimer of Longview, Wash., files his intentions. Wertheimer is with the Longview Fibre Company, and I hope on the day in question he will not be 1,000 miles from Boston but just about ten miles up the North Shore with the rest of us.

Martin Buerger requests that I send out a list of those planning to attend. The list is already too formidable to print

here, but I promise to send out to all those registered when our registration is somewhere near complete, a list of those signed up. We requested suggestions and here is a good one tersely put from Russ Ambach: "Reduced R. R. Fares Have Men Plan Vacations Honeymoons and Anniversaries for June 1." One asks why the reunion is so early. Well, our reason for that was to select a date upon which the Institute would still be in full swing, and the week-end of June 1 was the last such week-end. This may interfere with some who have to present first of the month reports, but not much, we hope. And in order to make provision for those who wish to remain for Wellesley, Simmons, Radcliffe, or other reunions, which come a little later, permission is hereby given to hold an echo reunion on the next week-end.

We are trying to find a buyer for a water power project. If we can, we can get another at the Reunion for witness this from L. B. Feagin: "Best of luck to all the gang and reunion committee for a most successful reunion. Can't make it unless I can sell Mr. Wilson's Dam. Please submit your bids to Feagin at Box 994, Wilson Dam, Florence, Ala." More than anything else, women are going to ruin maximum attendance. Some of the Class are planning honeymoons about that time, or else have just recently become married and don't feel they can make it.

Bill Delehanty won't be there because he is leaving for Europe. He writes he has been working on a Bushnell Memorial now being erected in my own city of Hartford. He leaves for Vienna on January 5 with Dave Shotwell, a fellow architect and a 1922 man. — Jack Spaulding is now with the New Century Company, flour merchants at 3940 South Union Avenue, Chicago, Ill. He doesn't write much about himself, and doesn't see many Technology men that he could write about. About the only one he does see is Winthrop Coolidge '23.

And my request to every one that they write to their Gensec has at last produced a result. Let me quote a part of a letter from Dick Shea of Course VI-C now at 149 Mt. Pleasant Avenue, Newark, N. J.: "I suppose it seems somewhat strange for a class secretary to get an enthusiastic and somewhat violent letter from a classmate whose name is probably not very familiar, but you can attribute it to the fact that I am numbered among those legion who monthly peruse the alumni news and sigh or gloat over the absence or abundance of news of old friends, and all the time plan that some day they will sit down and render an account of themselves. So here I am, and all the enthusiasm is the result of repression, if you will, or just plain collegiate foolishness. As to yours truly, since graduation I've been exalting the engineering staffs of American Bosch, Amrad, and now Kolster Radio, making good radio sets better. Haven't had much contact with other fellows, but I am still interested in their doings. I may possibly lay claim to being the DeWolf Hopper of the Class, for while the rest announce

marriages and births, I have one divorce to my credit, in the meantime striving valiantly to stave off the ravenous females thirsting for my scalp. So far the one wound stripe is enough, but one can never tell. Can one?"

George Knight was married on December 1 to Miss Margaret Elizabeth Hale of Watertown, and they are living at 28 Holden Green, Cambridge. — The engagement of Herbert R. Stewart to Miss Winifred Marion Hughes of Fairhaven, Mass., has been announced. Miss Hughes is a graduate of Radcliffe College and also attended Simmons College. Stewart is now an engineer with the Westinghouse Company in Boston. — HAROLD G. DONOVAN, *Secretary*, 139 Girard Avenue, Hartford, Conn.

'26 R. W. Spry '27 has recently written the Secretary about the death of Andrew Lambertus, a member of Course II. He died on October 2, 1928, following an operation. The Secretary takes this opportunity of extending publicly to his family and friends the sympathy of the Class.

Notices of two marriages have come to hand. On Saturday, December 29, in Fairmont, Mass., Miss Julia Woodbridge Newton was married to Smith Davison Turner, Jr. Dates are not available of the marriage of Bob Chidsey, but the Secretary is informed by the Course I Secretary of 1927 that he was recently married to Miss Lois Eddy. Their present address is Box 161, Clinton, Conn. — A note from F. P. LaBoon sent from Colombia included a card announcing his engagement to Miss Katherine Maltman.

Another letter has arrived from Bill Millar now in South Africa: "About two months ago I sent a note ordering some groceries to Ndola, our source of supplies town located sixty miles from here. Now day before yesterday a fellow came up and apologized to me, saying that he had just recently found my note acting as a stopper in his castor oil bottle. The point is that if none of my letters reach you the blame can in part be laid to previously uncorked castor oil, whiskey, or gin bottles.

"Speaking of castor oil reminds me to say that I believe the efficacy of that homely beverage is underestimated in the States. Down here it represents the cure-all for every native ailment whatsoever. My water carrier had rheumatism badly but, presto-chango, one glass of castor oil and he was cured. I have seen malaria waver and fall before the triumphal march of castor oil. But after all, you're probably not collecting unsolicited testimonials.

"If I remember rightly, I wrote you last while out camping on the veldt. Since then I have moved into town, a town being a place where sufficient brush has been cut to enable one to see the neighbors' tents or kimberly brick (glorified adobe) houses. This particular town is called Mufulira and is noteworthy as our chief prospecting district. Core drilling, pitting, and, recently, mining make up the work in hand, the



ultimate object of which is correctly interpreted as being the opening up of a big copper mine.

"Since leaving the field for the more domestic pursuits of town life the sundry adventures of African existence have become more commonplace. We went hippo-shooting last week, and although those bulky but relatively agile animals have little or nothing to fear from my Winchester 30 since I would have to make an eye shot to inflict serious damage, yet they refrained from showing their noses above water, possibly owing to an inability to distinguish one caliber from another. Thus in lieu of shooting we went swimming in a river supposedly full of crocodiles, but here also our luck (or the crocs') failed. . . ." — J. R. KILLIAN, Jr., *Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

**27** Either our Course I men are the only ones who get any thrilling experiences out of life or else they are the only ones who find a few odd moments to sit down and write about them. Witness first Russ Westerhoff's letter to Lee Miller in this issue and then our report of a recent visit from Deke Crandall. — Deke came in the day before Christmas following an absence of several months and reported that he was working for the Board of Transportation of the City of New York in the Brooklyn side of the new East River subway tunnel where he acts as a kind of inspector or intermediary between the contractor and the city. It is a tough life, he says, but lots of fun working down there in the muck 200 feet out under the river under a pressure of from eighteen to twenty-four pounds per square inch above atmospheric pressure. He is living at 128 Christopher Street with Gifford Symonds and with Jimmy Bell, Course IV, who is working for York and Sawyer, architects. Deke reports that George Fexy, also Course I, is working in the design Department of the Board of Transportation. George does not have to climb down into any tunnels; instead he has at least a drafting board and a telephone over which his broker sends him the latest happenings on the Stock Exchange.

In a recent letter to Morg Collins, your Secretary added a postscript, "How about some news about yourself for the Class Notes?" In answer to the letter Morg in his best executive manner drew an arrow to the postscript and scrawled on the letter, "There is nothing new, Johnnie, Morg." From this we take it that Morg is still at the School of Business Administration at Harvard. — Warren (Judas) Priest visited the Review office a short time ago and reported that he had become engaged to Miss Carol McGaw of Brookline. Miss McGaw attended Miss Wheelock's School. — Just before Christmas Ed True dropped in at the Institute, and he had been here only an hour or two when an attack of flu laid him low. He was rushed to the new infirmary where Dr. Morse fixed him up enough so that he could finish his homeward journey on Thursday. Ed added nothing much in the

way of news to pass along, except that after the first of the year he will be somewhere in New York.

A letter from Chester A. English, Course VI, from 5647 Clemens Avenue, St. Louis, runs approximately as follows: "I am at present (take a long breath) assistant production and warehouse manager of the St. Louis Lamp Works of the General Electric Company, having been transferred there from East Boston. (That is for publication, what follows is not.)" That is all the news we got out of Chet's letter. — On November 24 Luis A. Arana sent us his check for Alumni Association dues with the remark, "I have recently arrived from a long prospecting expedition and it is only now that I can fill in the enclosed blank." We wish that we might hear a little more about that long prospecting expedition. His address is 101 Avenida Brazil 101, Lima, Peru, South America.

This about all for this time. The stock of news is getting low, and your Secretary again beseeches you to get behind a pen. — JOHN D. CRAWFORD, *Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

#### COURSES I AND XI

There is one New Year's resolution I hope every '27, Course I and XI man made, and that is to send some news to me at least once every year. This month I received just one letter, and as it is full of interesting experiences, I want the rest of you to enjoy it. From Russ Westerhoff: "Right after graduation last year I started working for Ford, Bacon and Davis, Inc., engineers in New York City. I spent about two months over a drawing board in New York learning how to trace plans for a large power plant in Louisiana. It was a more difficult job than the one we had in bridge design, and I could not tell what the work was all about for a couple of weeks. I wished many times I had had more experience in drafting.

"One Thursday afternoon toward the end of July, I was called into the office of the operating manager of the valuation and report department and told to pack my bags and be prepared to leave for Arizona the next evening. This gave me quite a shock, but it thrilled me with the thought of seeing the western United States. I left New York one evening late in July, and my first stop was Chicago, where I had to wait five hours for my train west. I spent the afternoon and early evening with Morg Collins and had dinner at his home. I hardly expected to see Morg so soon after graduation, but the unexpected chance to visit him was enjoyed beyond words. My next stop was to be Phoenix, Ariz., where I was to meet another man from our office and take up my duties under him. As the train pulled into Kansas City on Sunday morning I ran into Isaac Salmon, XV-3, '26, in the dining car. Pink got off at Topeka, Kans., to spend a few years there learning all about the chicken and egg business. When I left him he was working for the Seymore Packing Company. I knew George Copeland was working on a ranch in Arizona and wired him to meet me at the Flag-

staff station. Cope was on the spot when the train pulled in, and we spent an enjoyable fifteen minutes together before the train pulled out.

"While on the train I received a telegram ordering me to get off at Wickenburg, Ariz., a small town of about 200 inhabitants sixty miles north of Phoenix in the Salt River Valley Desert. My train brought me to Wickenburg about 5 A.M., and when I first cast my eyes on that desolated region which was colored with a purplish-black tinge, I thought I had been dropped off at the end of the earth. I guess that section of the country is one of those that God forgot to finish.

"My job out in the desert was not hard physically. I held the title of an inspector on a drilling job on a Placer gold mine. I had an opportunity to make use of some of the dope spilled out by Dr. Terzaghi in Foundations — always asking the drill man what he thought about the material and then recording my decision. The drilling operations were carried on in the bed of the Hassayampa River. This river was as dry as the Sahara, but when rained decided to fall to the north of us, the water came down in torrents and turned the quiet sparkling sandy river bed into an ocean of mad rushing water. At first I would not believe the natives when they told me how quickly the river could rise after a rain storm. The ground is so impervious out there that the water runs off it as if it were a duck's back.

"Our first job was to drill a well for water, so we could have water for the drills and for drinking purposes. Our churn drills were set up about ten miles south of Wickenburg. We used churn drills and went down to rock bed. Samples of the soil were taken every five feet in depth. I had to keep track of the depth drilled, take samples, and watch them with an eagle eye to prevent them from being salted by some one working on the job. The samples were turned over to our assayer for assay. The casing on each drill had to be capped off each night and sealed by us and the seal broken each morning. This was done so that no one would throw some gold in the hole during the night to make the soil pay more.

"The country out there was full of irregularly shaped hills and mountains and had very little vegetation. I saw several varieties of cactus and learned that the needles on it do hurt when they stick you. Our recreation consisted of chasing rattle snakes, tarantulas, gila monsters, scorpions, and red ants, and driving out into the hills at night to watch the sun set. We were sixty miles from the nearest good-sized town, and therefore led a lazy man's life in that hot country. Speaking of heat: at 8 A.M. the thermometer usually read about 85 or 90 in the shade, and by two or three o'clock in the afternoon it read 115 to 120 in the shade. We had to erect canvas shelters to keep out of the sun. I believe you could fry eggs in the hot sand if you wanted to try it.

"I spent a month and a half in Arizona, and then returned to New York to go back to the Institute. I was glad to have an excuse to leave that place before the

1927 Continued

job was over and return to a more civilized part of the country. I spent last year at Technology taking graduate work in Civil Engineering, and I emerged in June with an S. M. degree in Civil Engineering after struggling through Charlie's course in Advanced Structures. While at school last year I saw the following men: George Copeland, Ken Smith, Bruce Sherrill, Soapy Woodbury, Lauritz Rasmussen, Shorty Newell, Fred Canada, and others in Course I whom I cannot recall now. They all visited the Institute some time during the year.

"I had a letter from George Copeland in July. He was building yards for the Peoria and Western Railroad at Peoria, Ill. His address was Box 316, Peoria. I don't know whether he is still out there or not, however, he may be reached by writing to the Austin Construction Company in Philadelphia. I recently spent a week-end with Ken Smith. He is working for the Turner Construction Company in Philadelphia.

"I guess I had better cut off this chatter by telling you what I am doing now. After taking a couple of months' vacation this year I started toiling for a living. I am working for Ford, Bacon and Davis, Inc. at 39 Broadway, New York. I am in the valuation and report department, and therefore my work leads me to all parts of the country. I never know where I will be next. Just at present I am working in the New York office and applying Professor Hanson's accounting system to keep a record of the construction costs on a natural gas pipe line being constructed by the firm down south. I am working under Samuel J. Cole '25. Before the winter is over I expect to go out on the construction of a natural gas pipe line somewhere in Texas. My work has been general this fall, not specializing in any one subject, so I have no idea what branch of engineering I will end up in. I would like to hear from you sometime, if you have the time to write. Where is Rene Paine now? I would also be glad to see some of the boys around New York." — LEROY G. MILLER, *Secretary*, 711 West Clinton Street, Elmira, N. Y.

## COURSE V

George Standley is step by step approaching his Ph.D. degree. He has successfully passed his language examination and is anticipating his physical chemistry quiz. Dr. Huntress, in the organic Laboratory, is retaining George again for this school year as one of his valuable assistants.

Mr. and Mrs. R. MacArthur have left Boston and its environs. The University of Pittsburgh has the benefit of Mac's services this year. Also, it is conferring some knowledge upon its assistant. He can be reached by letter at 216 Robinson Street, Oakland, Pittsburgh, Penna. — As these notes are written, your Secretary plans to move. His old home address should be disregarded; but as his appointment was made permanent, the following address can be used — EDWARD T. DUNN, *Secretary*, U. S. Tariff Commission, 8th and E Streets, N. W., Washington, D. C.

'28 Among those good resolutions which you made on January 1, I hope that there were about 399 pledges to keep in touch with your old undergraduate pals through the columns of *The Technology Review*. It really is hard to believe that all of that class spirit last seen and smelled on Rainsford Island could have dwindled down to such a dearth of notes as is here reflected. Ten minutes of your time will do the trick, and if you are Scotch a penny card will carry the news to your Course Secretary. The addresses of all the Course Secretaries have previously been published in *The Review*. It's just another of those situations where "it all depends on you." Our Class has the enviable record of having the largest group of active and associated members in the Alumni Association — in fact, 1928 has the largest delegation that any class has had in spite of the fact that it is one of the smallest graduating classes in recent years. Twenty-Eight is in a position to be doing things in a big way and we will do them as soon as we can overcome this post-graduation inertia.

Carlos Ferre, X, is now chief chemist for the Porto Rico Iron Works, Inc., of Ponce, P. R. At the present time he is temporarily located on a job in Venezuela, in the jungles of Orinoco where his company is installing a sugar factory. He seems quite pleased with his work down in the torrid belt. — George Hubbard, XV, spends his daylight hours in the standardization department of the U. S. Aluminum Company at Edgewater, N. J. He seems to be enjoying life for he writes, "Now we play bridge until 2 A.M. and then go to bed instead of studying until 4."

Hue Thomas, I, transfer from the University of Georgia, returned to Savannah after polishing off his education under the direction of Professor Spofford and Company. He now has one of these soft graft jobs with the government on some harbor work around the port of Savannah. It is reported that he greatly enjoyed the 1928 edition of the Georgia-Georgia Tech football game which seemed to be hardly more than a practice scrimmage for the southern engineers.

Suite 322 in the New Riverside Apartment Hotel at 420 Memorial Drive, Cambridge, Mass., is at present Ye Olde Executive Offices of the Class of 1928, M. I. T. Visitors at the above address will find the names of Messrs. Jope and Chatfield on the portals and also a latchstring that is always on the outside. — GEORGE I. CHATFIELD, *Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

## COURSE VI

Information from Course VI-ers has been rather slow in accumulating for the last two months which accounts for the omission of news in the December Review. If those who have not as yet found an opportunity to unburden themselves of information relative to their professional standings would grab a few minutes from their hectic careers to dash off a few lines, we would appreciate it exceedingly.

The first letter I find at hand is from Lawrence Glassman, dated way back in September. Glassman states that he is returning to the Institute to work for his Master's degree this year. — Next comes a brief but pithy epistle from Ed Lockwood to the effect that he is working for the New York Telephone Company and is living in Jackson Heights, L. I. Bill McClintic, he says, is working for the New York Telephone Company also. Ed says that Alex Fowler was working in Washington, D. C., during the summer for the American Tel. and Tel. doing research in carrier telephony. Thanks very much for the news, Ed. Come again when you get a chance, please.

Redmond (Red) Walsh writes from Schenectady, N. Y., to say that he is working for the Mohawk Hudson Power Company, taking their student engineer course. Bardwell is on the same job and they both apparently like the work. Red started to work for a power company in Ohio but reneged in order to get back East. — Johnny Melcher came across with a very breezy letter some time in November telling of his work with the Leeds and Northrup Company. From his letter he is also taking a student training course, presumably for sales, although he does not say definitely. However, we are firmly convinced that it is in sales or some allied field that Johnny's varied talents could be most effectively employed, so until it is contradicted we will assume that he has designs on the position of Vice-President in Charge of Sales of Leeds and Northrup Company. Johnny said that Tom Wood, II, who is working for the Corning Glass Works, paid him a visit recently. The greatest difficulty Leeds and Northrup experiences, according to John, is to make production keep pace with sales. They make thermo-couples for every purse and purpose, he says, so if you are in the market for some nice well made thermo-couples, and so on, he can undoubtedly supply your every want.

Your Secretary spent a few days in Pittsburgh early in December while on a hurried business trip, and was fortunate enough to meet most of the boys who are working for Westinghouse. John Carvalho, Jim Kay, Dick Proctor, Bill Bendz, and Ernie Knight are all taking student engineering courses, if my memory is correct. Jim Ryan is taking the Westinghouse sales course, as is also Stew Currier, I believe. All the boys mentioned as taking the engineering course were up to their ears in work when I hit Pittsburgh. — Johnny Russell worked for Westinghouse during the summer, but returned to the Institute in the fall to teach and take advanced work. Johnny apparently isn't satisfied with his S. B., but is desirous of further conquests in that direction. Best of luck, John. We're all rooting for you.

Arthur W. Griffith is now living at 428 Memorial Drive, Cambridge.

Perhaps a word about Bob Mercer and myself wouldn't be amiss. Bob and I are at present employed as student engineers for the Electric Machinery Manufacturing Company of Minneapolis. At the



completion of the course next summer we are to be placed in sales offices, presumably in the East. Our company manufactures synchronous motors, alternators, capacitors, motor-generator sets, and so on. Synchronous motors constitute by far the largest part of our business and it is in that field that the company specializes. So when you encounter some particularly difficult drive in your plants, let us bid on it. Satisfaction guaranteed or your money refunded (adv.). — PETER H. KIRWIN, *Secretary*, 1201 Fifth Street, S. E., Minneapolis, Minn.

## COURSE XIV

The Course XIV notes for January are necessarily meager, only one communication having been received since the November issue of *The Review*. Mid Chism has written very profusely describing his activities since Commencement. After their marriage about the middle of June, Mr. and Mrs. Chism spent several months touring Canada, the National Parks, and the Pacific Coast, their destination being Seattle, Wash. In his very able manner Mid has described the beauties of a motor trip through the West, a trip which would

make one who has not been there truly envious. As to his position Mid is production Engineer for the Electric Heating and Manufacturing Company, located at 400 Sixth Street North, Seattle, Wash. He is looking forward to making the country a hot place to live in even in the coldest weather. — Basilio informs us that Kessler has returned to the Institute for graduate study. It is also understood that John Kolligian returned to Technology but was forced to discontinue his studies because of illness. — CHARLES E. BERRY, *Secretary*, 103 Nott Terrace, Schenectady, N. Y.



## NEWS FROM THE CLUBS

*New Haven County Technology Club*

THE New Haven County Technology Club held the second meeting for this year on December 1 at the home of Gerald M. Keith '12. Charles E. Smith '00, Vice-President of the New York, New Haven and Hartford Railroad, discussed present-day railroad problems in a very entertaining way. Since graduating from the Institute, Smith has been bridge engineer of the Missouri Pacific Railroad, and was for twelve years a consulting engineer in St. Louis. The attendance was thirty-eight, an exceptionally large gathering for our Club. At the close of Smith's address, those present expressed their appreciation of Mr. and Mrs. Keith's hospitality. Refreshments brought the evening to a close. — HUDSON B. HASTINGS '07, *Chairman, Publicity Committee*, 6 Everit Street, New Haven, Conn.

*Southwestern Association of M. I. T.*

The December luncheon of the Southwestern Association held at the University Club, Kansas City, Mo., on December 12, was attended by Bransford W. Crenshaw '24, James W. O'Brien, Jr. '18, Frederick H. Dierks '12, Donald C. Bollard '07, Richard J. Sholtz '22, Eltweed Pomeroy, Jr. '23, John J. Falkenberg '19, James C. Irwin, Jr. '18, Henry F. Hoit '97, John E. Johnson '08, Allston T. Cushing '11, George W. Hall, Jr. '23, Hermann C. Henrici '06, and the Secretary.

After luncheon Hoit made a very interesting talk on the fourteen-story addition to the Telephone Building in Kansas City. This addition makes the Telephone

Building the highest structure in Kansas City, with a total height of twenty-eight stories. Plans for this project were prepared by the architectural firm of Hoit, Price and Barnes (Edwin M. Price '08).

On the evening of December 14 our Association held a dinner and bridge at the home of Henrici. This was attended by Francis H. Littrell '23, William L. McPherrin '14, Harry L. Havens '09, Hoit, Sholtz, Cushing, Pomeroy, Henrici, Johnson, Crenshaw, Hall, John J. Falkenberg, and Brown, and their wives. The success of this party was due largely to the good works of Mrs. Henrici, Mrs. Crenshaw, and Mrs. Brown, who purchased the food and had general supervision of this project.

O'Brien reports the arrival of William Berry O'Brien on November 1. — CHARLES E. BROWN '20, *Secretary*, 402 Interstate Building, Kansas City, Mo.

*M. I. T. Club of Western Maine*

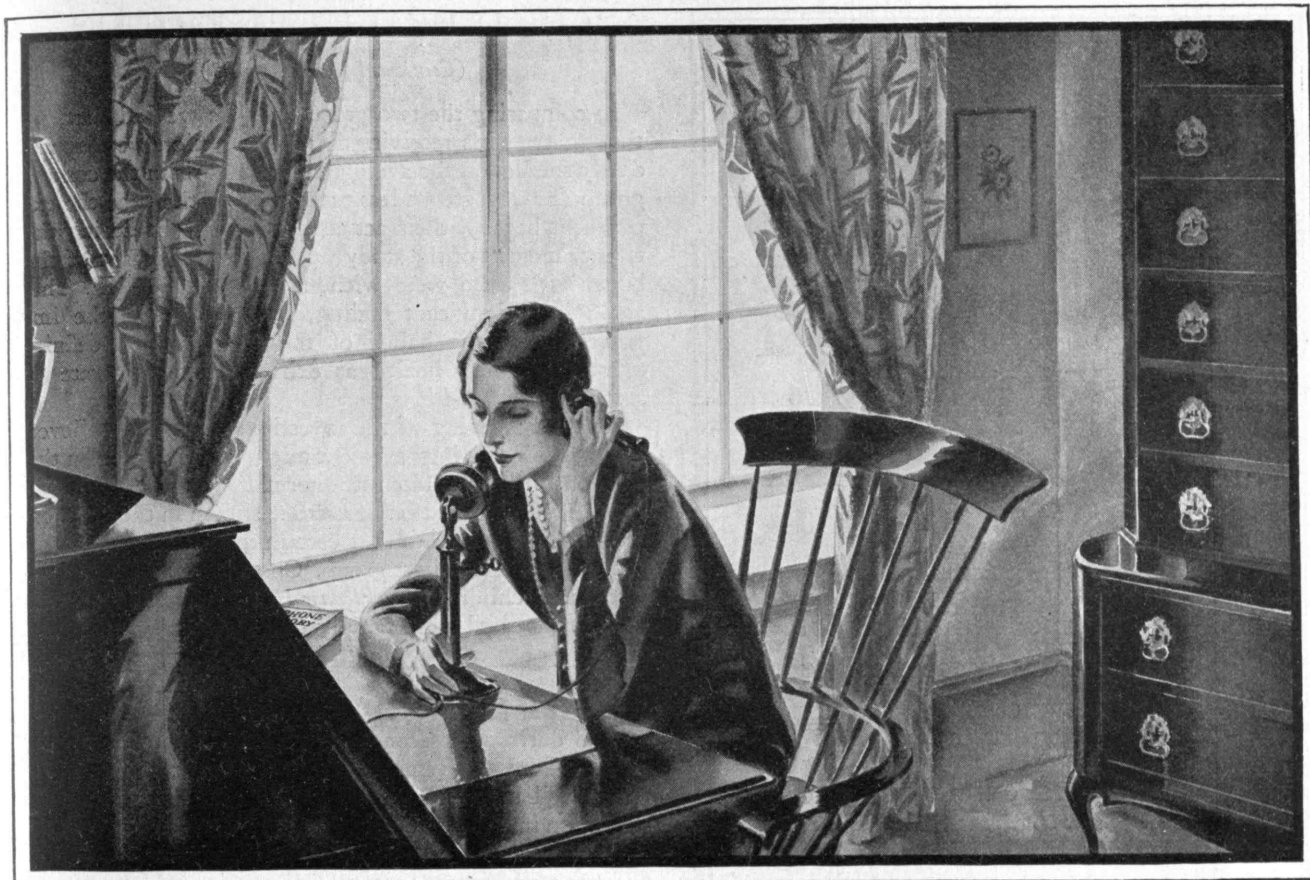
The annual meeting of the Western Alumni Association of the M. I. T. was held at the Marsh View Inn on November 22. Twelve members were present: Stanley W. Hyde '17, Walter H. Norris '93, Raymond F. Bennett '99, Raymond J. Mayo '02, Asa H. Morrill '92, Lester I. Beal '18, Donald O. Hooper '15, Charles E. Fogg '06, Lewis D. Nisbet '09, James R. Hawkes '19, William H. Dow '89, and William N. Todd '04.

The following officers were elected for the coming year: President, Dr. Fogg; Vice-President, Mr. Beal; Secretary, Mr. Bennett; and Treasurer, Elmer L. Wengren '95. The representative to the Alumni Council elected was Dr. Fogg, the members of the Executive Committee were Mr. Morrill and Edward M. Hunt '94, and the Chairman of the Committee on

Admission was Mr. Hyde. It was voted that the President and Secretary arrange for monthly luncheons to be held on a certain fixed date of the month, time and place to be announced at a future date. — JAMES R. HAWKES '19, *Secretary*, 506 Clapp Memorial Building, Portland, Maine.

*Indiana Association of the M. I. T.*

Ladies' Night at the Indiana Association was held on December 6, at 6:15 p.m., at the Lumley Tea Room at 1540 Meridian Street, Indianapolis. A fine baked chicken dinner with all the accessories was served. Officers for the coming year were elected and will be announced later. Following the dinner Alexander R. Holliday '99 gave an illustrated talk on ancient Egypt entitled "Ancient Egypt — by the Art Institute Collection." This lecture of intense interest was made possible by his kindness and the cooperation of the John Herron Art Institute. The Club members proceeded to the John Herron Art Institute about a block away where Mr. Holliday gave his talk, illustrating it with specimens from the newly-acquired Egyptian collection. Mr. Holliday, a director of the Art Association of Indianapolis, acquired the bulk of this collection during a recent sojourn in Egypt, aided by Dr. George A. Reisner of the Harvard-Boston Expedition now excavating there. The purchase was made possible by the bequest of Mrs. Emma Hartzer Sweetser, a former director. His talk included a historical sketch of the history of Egypt, whose civilization extends back over six thousand years. It was a rare opportunity and much appreciated by the Club members present. — L. WILLIS BUGBEE, JR., '21, *Secretary*, 4170 Guilford Avenue, Indianapolis, Ind.



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## CHILD HEALTH PROMOTION

(Continued from page 208)

In comparing the two groups of girls we find that, although the girls receiving health education were appreciably smaller on the average than the girls in the control group (having grown less rapidly up to the time the experiment began), their actual gain in weight during the twenty months of the study was greater than that of the larger girls who were without health education. This again is a significant finding, indicating that the improvement in the habits of these girls had a definite effect upon their health as exhibited in their rate of growth.

At the beginning of the investigation it was believed that a significant improvement might be discovered in the relationship of children to normal weight. Individual growth records like that of *Lois T.*, shown in the chart on page 206, demonstrate that certain individuals did come out of the underweight group. On the other hand, there were many children like *Eleanor H.* (see page 207) whose weight increased more rapidly than the average for girls of her age but whose growth in height was also so rapid that she still remained in the underweight group. Although the underweight children were slightly nearer normal during the second year than during the first the difference or improvement was so slight that it might perfectly well have been accidental. This finding of an acceleration in growth in both height and weight without a fundamental change in body proportions is similar to the findings of the recent Scottish Commission which records a similar growth improvement among children whose diet was improved.

The parent of today sees his child possessed of many new advantages in the public school. He will probably concur most heartily in the judgment of the National Education Association that "health is the first of the major objectives of education." A new appreciation of the contribution of the school to the public health is to be found not only among the sanitarians and educators but also among parents. The school health program with its broadening scope and better organization will continue to render an increasingly important service to the health of the community. In this development health education, the newest of the school health activities, is rapidly taking its place. Special programs for the training of leaders in this field are now well established at Technology, Columbia, the University of Michigan, and a few other institutions. Expert direction of the health education program is now provided in scores of the most progressive school systems.

School health programs are broad and cooperative activities demanding special skill in medicine, dentistry, nursing, nutrition, physical education and health education. With a better understanding of the part which each of the health specialists is to play, with a better understanding of the physical and mental nature of the individual child and greater skill in contributing to his particular needs, with a greater understanding of the objectives of the school on the part of the home and with the continually increasing cooperation between the household and the classroom, the school health program moves forward with ever increasing service to the nation.

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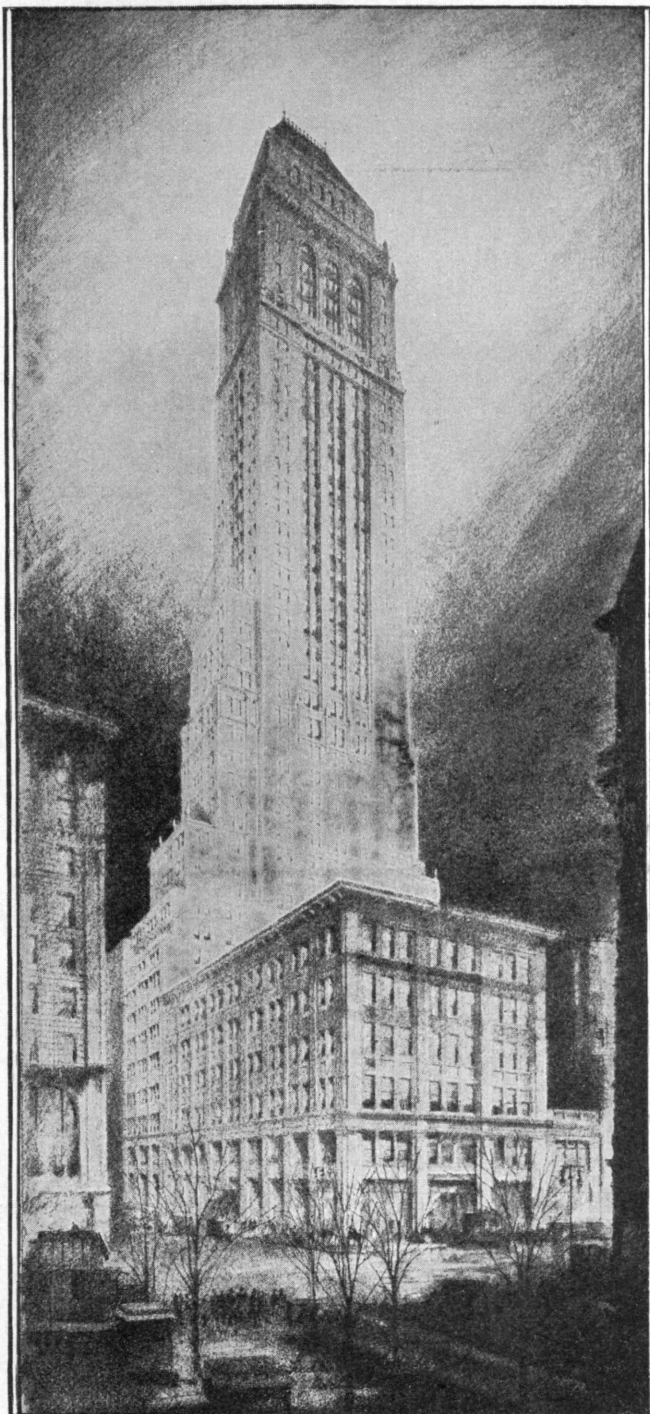
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## THE DUCTLESS GLANDS

(Continued from page 212)

adult years the male sex organ, so far as can be ascertained, produces little or no effect upon this body function. The adrenal in its failure lessens the oxygen requirement to a point below that of pituitary failure but falling short of the deep levels of thyroid underactivity. Values from 30 per cent to 35 per cent below prediction have been recorded.

Other conditions may produce departures from the normal which are apparent rather than real, as in the case of kidney disease with edema. The weight of the patient here is not a true index of the mass of protoplasm, and consequently the predicted value based upon that assumption may be materially above the truth. Under-nutrition is a very important cause of a lowered oxygen requirement as was noted in the introduction of this paper.

*Sugar Tolerance.* As was foreshadowed by the discussion of sugar in the urine in a preceding section, the metabolism of carbohydrates is subversively affected by a number of morbid states. The appearance of sugar in the urine indicates an over-stepping of the limit of assimilation of the individual which may come either from a lowering of that limit through disease or from gluttony. The quantity of the individual's assimilation limit, however, and its relation to that to be regarded as normal, has been shown to have great diagnostic possibilities. In these studies the rare sugar galactose was selected for a number of reasons. In the first place it is a simple hexose and therefore re-

quires no elaboration to render it absorbable. Secondly, it is capable of forming glycogen in the body, a necessary requirement if normal storage capacities are to be obtained. Thirdly, it is a sugar not foreign to the human economy as it is one of the components of milk sugar which plays an important part in our nutrition throughout life. Fourthly, its normal assimilation limits are low so that the test doses necessitated by notably increased assimilation limits do not reach a level where the ingestion of the sugar is followed by disturbances of the gastrointestinal tract. Fifthly, these studies have shown a most interesting difference seemingly intrinsic in sex.

Ingestion of thirty grams by the normal male from early infancy to the end of life will produce transitory appearance of a small amount of this sugar in the urine. In other words, the assimilation limit for the male is a constant throughout life. In the female, however, in the early years of childhood twenty grams is sufficient to produce a positive response. With dawning maturity the assimilation rises, and within the year reaches a level where forty grams are necessary to exceed slightly the assimilation limit. This level persists throughout the adult years until the climacteric, when there is apparently a slight downward tendency in the assimilation limit. Incidents arising during female sexual maturity also influence this assimilation limit.

Outside of assimilation differences determined by sex, the posterior lobe of the pituitary exercises a profound influence irrespective of sex. Underactivity of the posterior lobe will raise the (Concluded on page 246)

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THE DUCTLESS GLANDS

(Continued from page 244)

galactose tolerance 200 per cent and even 300 per cent in severe cases, while severe hyperfunction of the gland has an antithetical effect, lowering the assimilation limit practically to zero in the most severe cases. Aberration of thyroid activity produces changes paralleling those of pituitary in direction but falling far short of them in magnitude. Ovarian failure, as already noted, lowers the limit, but in the extreme case only by 50 per cent. Adrenal failure parallels pituitary overactivity, and in the later stages of Addison's disease a few grams of galactose is enough to produce a positive response. Of the non-endocrine conditions, severe liver disease will produce levels equivalent to those of pituitary or adrenal; injuries to the central nervous system, a like result; while syphilis produces a downward tendency which but rarely attains the low levels of the foregoing. An interesting condition which has been brought out by these studies and which is now under investigation, lies in the observation that in certain disturbances of liver function the assimilation limit is increased. So far as these studies go, this is the only non-endocrine factor producing an increased tolerance. Failure of the pancreas, as should have been noted among the endocrine series, lowers the assimilation limit of galactose as for glucose.

It is obvious that in the brief limits of a journal article only a few points can be treated, and these in but scant detail. It has been possible here to touch on only a few

of the routine procedures of a diagnostic study and wholly to ignore the large number of additional measurements which have become available through individual studies in the special fields of medicine. It is the application of all of these and the consideration of each in terms of its fellows which forms the basis of the differential aspect of the diagnostic method. To make this even more clear, a brief table is offered in which the quantitative results are given of two representative tests in the presence of failure of four of the typical endocrine glands.

Gland	Pituitary	Thyroid	Ovary	Adrenal
Basal Metabolism	—	— — —	—	— —
Galactose Tolerance	+++	+	— —	— — —
+ = increase, — = decrease				

Inspection of the above shows that the qualitative and quantitative differences are marked. That this constitutes but one of a large number of similar comparisons should be emphasized.

In conclusion the writer wishes to say that the endocrine problem is still very far from solution. It is hoped, however, that work of the character outlined above will lead the way to a more comprehensive study of the diagnosis of disease, and that by the extended use of objective methods as a complement and supplement to the classical procedures of the clinic, surer methods of diagnosis will be ultimately produced. Objective facts define straighter limits than subjective theories and by their utilization progress should be made.

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### *Boston Massacre*

... "Fire if you dare, fire and be damned!" An icy snowball thudded against Captain Preston's well-tailored ribs. Trembling with rage, he cautioned his men: "Hold your peace!" A group of shivering idlers on the Boston street rapidly became a mob.

The mob pressed closer. "Lobster-backs!" jeered one Crispus Attucks, coffee-hued blackamoor. Then cat-calls, vile and insulting epithets, followed by a volley of hard-packed snowballs, some rock-pitted.

The Redcoats made little noises with their guns. "Hold your peace!" cried Captain Preston. They did; but the mob, now one great stupid animal, got louder, and the big-lipped Negro bolder. Soon he found a smooth pine board, raised it, thwacked a soldier's rump. The Redcoat turned, point-blanked his musket in Attucks' face. Spit! Flash! Crack! Negro Attucks screeched, fell dead. Other muskets spat and flashed. The mob recoiled in panic, leaving a sprawl of bodies (five starkly stiff) in the street. Blood oozed on the dirty snow. The soldiers, now ashamed, stood quiet. Captain Preston walked down the line, struck up their guns.

But it was too late to pretend that Massa-

chusetts had not defied its King. Drums beat, bells tolled, more Redcoats issued from the barracks.

"The Governor! The Governor!" . . . Acting-Governor Hutchison, white face set in hard lines, shouldered through the mob. "Captain Preston, what means this?" he thundered. "Consider yourself and your men under arrest, sir." To the mob: "Disperse at once, to your homes." . . .

So, in part, *TIME* would have reported the Boston Massacre of March 5, 1770, under the reign of King George III. Nor would *TIME* have omitted the events aggravating the affray—the townsmen's just resentment at the presence of two British regiments in the free capital of a loyal province, their just rage at having to pay for Redcoat board and keep.

So, too, would *TIME* have reported the turbulent mass-meeting of the day after: how Samuel Adams, popular emissary, forced Acting-Governor Hutchison to withdraw the troops to Castle William in the harbor. *TIME* would have stressed the subsequent trial of Captain Preston and his men; how Josiah Quincy and John Adams, patriots both, astute lawyers, defended the soldiers, that even-handed justice might be done.

Cultivated Americans, impatient with cheap sensationalism and windy bias, turn increasingly to publications edited in the historical spirit. These publications, fair-dealing, vigorously impartial, devote themselves to the public weal in the sense that they report what they see, serve no masters, fear no groups.



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## BOOKS

*Continued from page 223*

of the family" by the *New Republic* dated November 16, 1927. Mr. Nevins has selected specimens from the work of Greeley, Dana, Godkin, Bennett, Bryant, Bowles, Cobb, Watterson, and other less famous or anonymous writers.

Long remembered editorials like Hamilton's attacks on Jefferson and the New York *Times's* announcement of its Tweed Ring revelations appear, but it is not only a collection of famous specimens. The test for admission was varied and some were chosen for their literary style, others for being typical of a publication or an epoch, others (the largest group) for their contribution to the history of public opinion.

The book is blessed with an adequate index.

### *Revisionist*

THE ORIGINS OF THE WORLD WAR, by Sidney B. Fay. \$9.00. 2 vol. xvii+551 and xi+577 pages. New York: The Macmillan Company.

**S**KILLFUL improvisations of Allied statesmen, neatly marshaled for public consumption during the War, have been under scrutiny by historians since the Armistice. Official White, Yellow, Orange, and Red books published from time to time by the various governments, it transpires, were both incomplete and inaccurate. There were deliberate omissions and deliberate perversions as well as unwitting errors caused by haste and partisanship. In the perspective of today it seems that the Central Powers may not have been entirely to blame for starting the War. In fact, to the extreme revisionist, Germany was almost guiltless.

Professor Fay, however, is not an extremist. His survey is calmer and less passionate than those of others such as his colleague on the Smith College faculty, Harry Elmer Barnes. Hence Professor Fay's writings are more convincing. His first volume treats of European history from 1871 to 1914; the second with the problem of war guilt. He concludes, "None of the Powers wanted a European War" but all "in a greater or less degree were responsible."

Thoughtful people, ten years removed from the patriotic fervor of 1917, will welcome such a competent and thorough-going study even though it destroys many a cherished illusion.

### *Sticks and Stones*

THE ESSENCE OF ARCHITECTURE, by William Roger Greeley, '02. \$2.50. xiv+119 pages. New York: D. Van Nostrand Company, Inc.

**M**R. GREELEY dedicates his book to the study of the elements of architecture, seeking by so doing to postulate some general principles of art, composition and proportion. His material is not unique but his accentuation of it is novel and will incite disagreement from many readers.

*(Continued on page 250)*



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*Continued from page 248*

The author lays emphasis on the considerations due the "background" in attacking an architectural problem. Such is the vogue since Lewis Mumford's "Sticks and Stones" was published. Precedent is quite important, says the author. Why be alarmed about Egyptian, Greek, Roman or Renaissance buildings in America since there are none? Civilization as it evolves will look after them. It is permissibly bizarre for a queen to have built on the side of a mirroring lagoon a dairy house for amusement! It is a travesty for an American millionaire to build a half million dollar farmhouse of steel and concrete by union labor, painfully rural, crude and rough of line. That doesn't settle the question. Architects will continue to wonder if it is all right to do Gothic in Kansas, or even Egyptian for that matter.

Mr. Greeley warns against being governed by any rules of proportion or design. He almost convinces one that after all design is mostly luck. True emotion wins over cool calculation every time.

Our old friends, Unity, Balance and Emphasis are present, but no mention is made of the parti or of the plan which are so strongly emphasized in the architectural schools. The book is concluded by a good chapter on ornament.

ROBERT E. JENKS, S.M., '28

### *Books in Brief*

SPECIFICATIONS FOR A HOSPITAL, by York and Sawyer, Architects. \$6.00. 488 pages. New York: *Pencil Points Press, Inc.*

**T**HE complete specifications for the County Hospital at West Chester, Penna., as drawn up by the architects, York and Sawyer, are here presented with notes and comments by Mr. Wilfred W. Beach. Mr. Beach has charge of "The Specification Desk" department of *Pencil Points*.

HANDBOOK OF NAPOLEON BONAPARTE, by Ivan L. Sjöström, '88. \$1.50. 145 pages. Philadelphia: *Dorrance and Company*.

**T**HE reader of an exhaustive life of Napoleon should find the Handbook a welcome help in interpreting the allusions he encounters. It contains a list of the principal events of his career, one arranged according to date and another according to name and place with references to a map folded inside of the back cover.

MEMOIRS AND ADDRESSES OF TWO DECADES, by Dr. J. A. L. Waddell. \$5.00. 1174 pages. Easton, Penna.: *Mack Printing Company*.

**T**HE *raison d'être* for this book is primarily a desire on the part of the Author to leave behind him a collection of those of his numerous papers that have not already been published in book form . . .," says the first line of the preface. Dr. Waddell is a member of a well-known firm of consulting civil engineers in New York. He was graduated from the Rensselaer Polytechnic Institute with the Class of 1875 and since then has been associated with the design and construction of bridges and railroads in all parts of the world, besides finding time to write an immense amount of material: technical

*(Concluded on page 252)*

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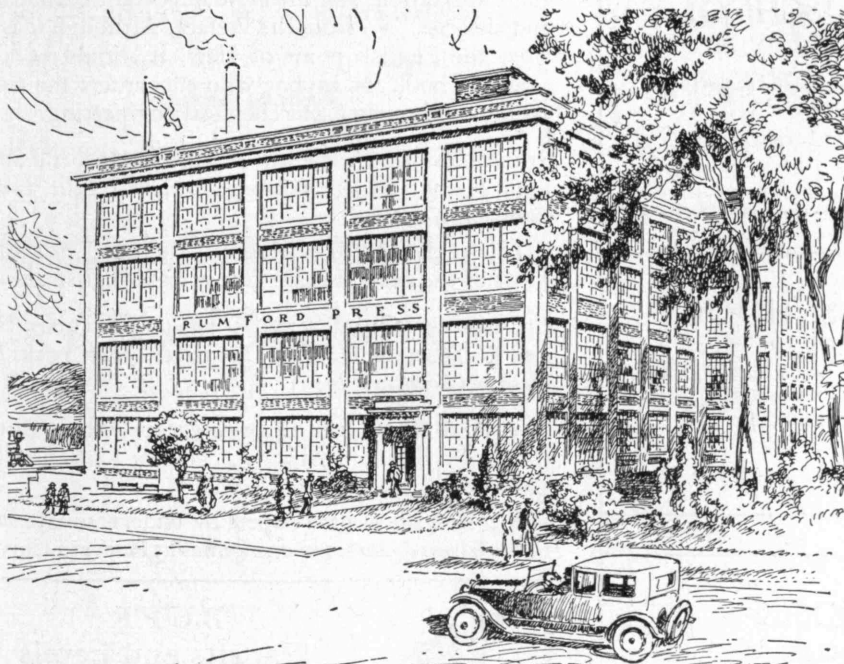
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*Concluded from page 250*

papers and dissertations upon professional ethics and engineering education. To the plethora of his writings, the 1174 pages of the present volume bear mute testimony.

We imagine that the book will be most useful as a reference work.

**MARVELS OF SCIENCE**, by M. K. Wisheart. \$2.50. 254 pages. New York: *The Century Company*.

**I**T IS popularized scientific narrative that M. K. Wisheart essays. He has succeeded in coloring scientific history with a romantic appeal to which laymen and engineers alike must favorably respond; the real test of the merit of popularized science has its basis in truth, real and unvarnished. He makes one feel the difficulties and understand the complexities which have faced those who have blazed the trail of Science.

**VIBRATION PROBLEMS IN ENGINEERING**, by S. Timoshenko. \$4.50. 351 pages. New York: *D. Van Nostrand Company, Inc.*

**V**IBRATION is a serious problem in the design and operation of many kinds of large and high-speed machines. The author, a professor in the University of Michigan, develops the theory and shows its application with problems drawn from his studies made for the Westinghouse Electric and Manufacturing Company.

**CHEMICAL ENCYCLOPEDIA**, by C. T. Kingzett. \$10.00. 807 pages. New York: *D. Van Nostrand Company, Inc.*

**T**HE subject-matters comprise pure, physical, and applied chemistry; descriptions of the elements and their chief compounds (organic and inorganic) as also the methods of their preparation, characters, and uses; brief accounts of ores and other natural products together with their utilization; and the more important chemical terms and theories." — from the Preface. Although it is edited from the English point of view, it should be a useful reference book for anyone who encounters the technical jargon of chemistry and chemical engineering.

**STRUCTURAL ENGINEERING**, by Joseph Husband and William Harby. \$5.50. 452 pages. New York: *Longmans, Green and Company*.

This is the fourth edition of a standard English text. Most of the examples are drawn from British projects.

**ELEMENTS OF QUALITATIVE CHEMICAL ANALYSIS**, by Wilfred W. Scott, Sc.D. \$1.60. 164 pages. New York: *D. Van Nostrand Company, Inc.*

**THE NEW ENGLAND ECONOMIC SITUATION**, edited by Edwin F. Gay and Allyn A. Young. \$2.50. 260 pages. Chicago: *A. W. Shaw Company*.

A collection of nine papers by undergraduate students in the editors' classes in economics at Harvard University.



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**T**WO advertising records fall with this issue of The Review, for it contains the largest volume of advertising ever carried in a single issue and it marks the largest amount written for any fiscal year at this date. The record gross piled up by the November, 1927, issue is bettered by 10.6 per cent, and the total advertising written to date for this Volume is 5.7 per cent greater than the final total of the preceding Volume which exceeded all previous ones. ¶ It is significant that, out of gross advertising totalling \$61,514.73 written since 1922, only \$238.05, or 0.39 per cent has been charged off to bad debts. More than half the amount charged off was on one account.

**I**T IS ALSO significant, and a great source of satisfaction to The Review, that of the Advertisers in Volume I, Number 1, thirty years ago, five firms or their successors are in this number. These members of the Thirty Year Club are CHAUNCY HALL SCHOOL, DEAN AND MAIN (now CHARLES T. MAIN, INC.), MERRIMAC CHEMICAL COMPANY, LEONARD METCALF, '92 (now METCALF AND EDDY), and STONE AND WEBSTER. ¶ Members of the Five Year Club will be recorded in next issue, but suffice it now to point out that twenty-nine of the fifty-four advertisers in January, 1924, are still using space in The Review. Of the twenty-five who have discontinued, six are out of business or have retired and four have forsaken the college field. January, 1929, showed thirty-two advertisers not in January, 1924. It is apparent that The Review advertising roster is made up of firms that are sound and long established.

**S**UBSCRIBERS, as well as advertisers, are loyal to The Review. Most magazines feel proud if they have a renewal rate of 60 per cent. A publisher who gets 65 per cent is considered to be doing exceptionally well; if he claims 70 per cent he is doubted; if he claims 71 per cent is set down as being loose with statistics. ¶ The special nature of The Review works much to its advantage, for 91 per cent of all that subscribed last year are again on the list this year, and there are many more that will come in. The Review is also reasonably sure of an increased circulation every year, because each graduating class increases the number of its potential subscribers.

**B**UT THERE IS MORE to circulation than totals and turnovers. What of its distribution and quality? A year ago The Review made an analysis of its circulation by trades and by functions. The entire circulation was classified geographically and from this total list 1000 names were selected, the number taken from each geographical district being in proportion to the total number in that district. Each name in the test group of 1000, which included no subscribers who graduated later than 1922, was then examined to determine its trade and function. The most surprising result was the high percentage of executives and professional engineers. Together they totalled slightly over 85 per cent.

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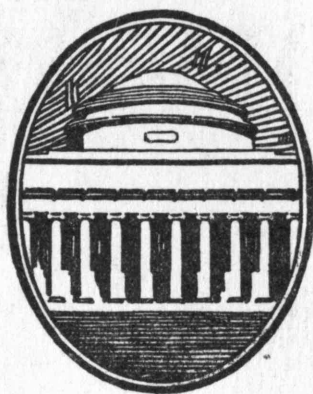
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The Institute publishes a variety of bulletins, fully descriptive of individual courses, as well as a catalogue of general information essential to the entering student. The Technology Review Bureau will be glad to send, gratis and post free upon request, one or more copies of any publication listed below, or to forward any special inquiry to the proper authority.

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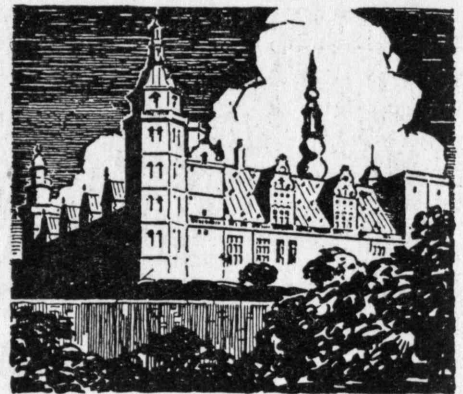
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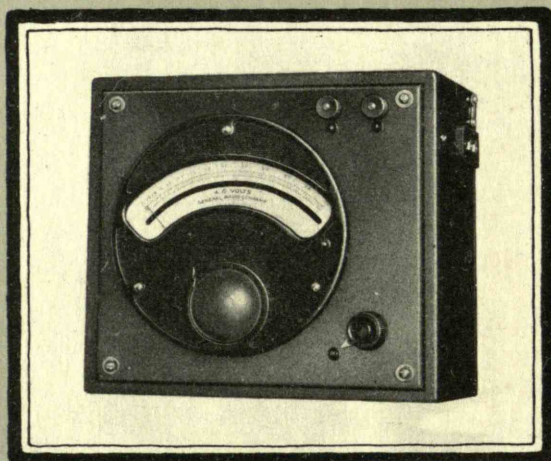
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